School-based interventions to address obesity: Considerations for European policymakers

“Schools play a critical role in preventing childhood obesity. Governors, state agencies, and state boards of education can do much to help them. Below are some strategies that states have used and that have shown promise in helping schools address childhood obesity.” CDC, 2010

INTRODUCTION

The prevalence of childhood overweight and obesity across Europe continues to rise and countries are off track for meeting global targets to halt the rise in obesity to 2010 levels. Since the 1980s, worldwide prevalence has increased by 47%. Studies have shown that children who become overweight or have obesity are unlikely to achieve a healthy bodyweight later-on in life. This in turn can increase their risk of cardiovascular diseases, hypertension and type 2 diabetes in adulthood.

In addition to having serious health consequences, obesity can also have an economic impact on healthcare systems. When looking at obesity prevention interventions, it is essential pay close attention to the setting in which these are implemented as well as address social determinants including poverty, food insecurity and social inequalities.

WHY FOCUS ON SCHOOLS?

“The school environment has the potential to affect national obesity prevention efforts both because of the population reach and the amount of time that students spend at school each day. Children obtain about one-third of their total daily energy requirement from school lunch, and should expend about 50 percent of their daily energy expenditure while at school, depending on the length of their school day. Given that schools offer numerous and diverse opportunities for young people to learn about energy balance and to make decisions about food and physical activity behaviours, it is critically important that the school environment be structured to promote healthful eating and physical activity behaviours.”

Actions to address the obesity epidemic should be taken across multiple settings. Schools have been identified as a crucial environment to implement obesity prevention interventions, given their ability to reach almost 100% of children, independently of ethnic or socio-economic group. Additionally, students spend half of their time and consume at least one-third of their daily calories at school, making it valuable focus for policymakers. The reach of school-based interventions goes beyond students and can also have a beneficial impact on young people, school staff, families as well as community members. This further highlights the schools as a valuable setting for population-level interventions.

School-based interventions are varied and can include a number of different components: diet intervention, physical activity, health education, weight management, school policies, psychological counselling and parental involvement, among others. Body mass index (BMI) is often identified as the primary outcome to measure the impact of an intervention. Acknowledging that the duration of the studies ranged from two weeks to four years, a systematic review focused on school-based obesity prevention interventions in the U.S. and in international settings highlighted...
that 70% of interventions reported a decrease in BMI and/or overweight or obesity. Additionally, a systematic review conducted in European countries found that in 76% of studies, children adopted healthier eating behaviours and 25% highlighted improvements in body composition.

Few cost-effectiveness studies have been conducted on existing school-based interventions in Europe, however studies from other countries suggest promising results. For instance, a study conducted in Canada modelled three scenarios, all of which showed the APPLE Schools programme to be cost-effective. Additionally, results were more favourable when the scenarios were modelled over a longer time horizon. The analysis of Planet Health, a school-based obesity prevention programme, highlighted that by investing $14 per student per year, the intervention could prevent 1.9% of women students from becoming overweight. Results were even more encouraging on the long term: the societal impact of Planet Health was predicted to be non-negligible with an estimated $15,887 saved in medical care costs and $25,104 in productivity costs, all of which translated into a net saving of $7,313 to society.

RECOMMENDATIONS

Based on the evidence from systematic reviews, cost studies, case studies, government guidelines and recommendations as well as civil society organisations statements compiled in the dossier, a number of key considerations for planning and implementing successful school-based obesity prevention interventions were identified:

- **Develop multi-component interventions**: The need to adopt an interdisciplinary and holistic approach when developing interventions to tackle the growing prevalence of obesity has been emphasised by the WHO. Interventions combining physical activity and diet have been shown to increase the effectiveness of school-based childhood obesity prevention programmes. Additionally, studies have shown that the inclusion of a home element including a parent a family or parent component, has a significant effect on weight reduction.

- **Assess the allocation of resources**: Ensure sufficient financial resources are allocated to programmes, and that this resource enables sustained interventions.

- **Tailor the programme to the targeted audience**: Ensure that the programme developed is feasible, both in terms of socio-cultural acceptability and resources available. Policymakers need to ensure that the programmes are inclusive and participatory.

- **Incorporate evidence-based strategies**: Ensure that the developed interventions are supported with evidence to increase the likelihood of successful implementation of school-based obesity prevention interventions.

- **Involve different stakeholders**: School-based interventions are complex and have the potential to have a population-level effect. It is therefore crucial to involve an array of stakeholders both during the design, implementation and evaluation of school-based interventions including students, parents, teachers and...
school staff, governments at state, regional and national levels, the broader community and the food industry.

- **Develop school nutrition policies**: Schools should develop nutrition policies following appropriate national guidelines. These should promote a lower consumption of high in fat, sugar and salt foods, encourage the consumption of whole grains, fruits and vegetables and support the establishment of healthy behaviour environments.¹⁹

- **Focus on obesity prevention**: The evidence overwhelmingly shows that habits developed during childhood extend into adulthood. Policymakers should focus on developing interventions to prevent childhood obesity through the promotion of healthy eating habits, physical activity and increase food and health literacy through the school curriculum.

**CASE STUDIES**

Across Europe, schools are increasingly being recognised as an ideal intervention setting to implement interventions attempting to prevent obesity. Below are some case studies illustrating different interventions implemented and lessons that can be learned.
Healthy Schools London

Why is a school-based intervention needed?
The prevalence of childhood overweight and obesity has increased over the past couple of years and the health and economic burdens that come with it are disproportionately affecting cities like London. Children spend a majority of their time at school, making them an ideal setting to promote lifestyle interventions.

Description of the intervention
Schools have the ability to directly impact the lifestyle of children, both from a nutritional and physical activity perspectives. Furthermore, they have the ability to increase education and ensure that children make healthy choices. Healthy Schools London (HSL) was developed to help schools go further and get more schools involved in the health of children. Based on an award scheme supported by the Mayor of London, HSL works with “colleagues in London’s boroughs to build a programme that schools are proud to be a part of, and helps London’s children to be healthy, happy and achieve.” The programme is delivered by small teams in the Greater London Authority. Developed as a three-tiered award, it recognises the achievements of school “in supporting the health and wellbeing of their pupils.”

Impact
An evaluation of the HSL programme conducted between 2014-2016 revealed extremely positive results and concluded the following:
- “HSL provided a valued mechanism to encourage health promoting improvements at school level.”
- “The Greater London Authority core team, and borough leads, school staff, and others should be commended for the important and impressive roles they have played in establishing, leading and maintaining the programme.”
- “The impressive uptake of schools reaching Bronze award status (53% of schools registered) within 3 years of the start of the programme is remarkable.”
Why is a school-based intervention needed?
One in four to five children, or around 30,000 children, in Amsterdam are overweight. As clearly defined in the Amsterdam Healthy Weight Programme, “schools have the responsibility to act on the basis of their own professionalism.” One of the key components in the development of overweight is insufficient levels of physical activity. For this reason, JUMP-in was developed as part of the Amsterdam Healthy Weight Programme.

Description of the intervention
JUMP-in is a “systematically developed primary school-based intervention that focuses on the use of theory, environmental changes, parental influences and cooperation with multi-level parties in the intervention development.” JUMP-in was started in Amsterdam in 2002 and aims “to promote physical activity among primary school children.” While looking at personal level components, JUMP-in also addresses the physical and social environments. Working towards the accomplishment of eight goals focused on encouraging healthy lifestyles in children, the programme was developed based on six programme components:

1. School sport activities
2. A pupil follow-up system
3. The Class Moves!, in class exercises
4. Choose your Card!, lessons aimed at increasing awareness
5. Parental information services
6. An Activity-week

Impact
A total of 510 students participated in the study. Overall, it appeared that JUMP-in successfully promoted physical activity among Grade 6 primary school children. Now, more than 100 primary schools across Amsterdam are taking part in JUMP-in.
School Fruit Scheme, Lithuania

Why is a school-based intervention needed?

The prevalence of overweight and obesity across the European Union, including Lithuania, has prompted public health professionals to develop effective intervention strategies to halt the rise over the coming years. Indeed, it is estimated that 22 million children are overweight and 5 million of them have obesity. The World Health Organization recommends a daily consumption of 400g of fruit and vegetables per individual. However, the majority disregard this recommendation.

Description of the intervention

First implemented in 2009-2010, the School Fruit Scheme aims to “instil in children an awareness of the health benefits of eating fruit and vegetables.” Consequently, the objective is to increase the consumption of fruits and vegetables in children’s diets. The focus on primary school children was chosen given the opportunity to influence their eating habits during a period when they are still developing. As part of the Scheme, fruits and vegetables were freely distributed to pupils in primary school at Lithuanian schools who selected to participate in the School Fruit Scheme. Distributed products include carrots, apples, pears, bananas and citrus fruit. Participating schools are required to organise at least four activity per school year to increase children’s knowledge about healthy nutritional habits. These activities may consist of:

- “Children’s excursions to fruit or vegetables farms to familiarise them with how fruit and vegetables are grown and the product’s journey ‘from field to table’;
- Distribution in schools of information material on the benefits of eating fruit and vegetables (booklets, leaflets and other information publications);
- Training for teachers on instilling a healthy way of life and healthy eating habits in children; organisation of educational quizzes, drawing competitions and sports events to promote a healthy way of life.”

Impact

During the 2009-2010 implementation year, 171 schools took part in the programme and 21,222 children received fruits and vegetables as part of the Scheme. During the 2012-2013 implementation year, 1,365 schools and nurseries took part in the programme and 192,454 children received fruits and vegetables as part of the Scheme. According to school teachers and public health professionals, the Scheme was successfully implemented and children were described as consuming fruits and vegetables willingly.
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