



The role of schools in preventing overweight and obesity among students in Latin America and the Caribbean

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The role of schools in preventing overweight and obesity among students in Latin America and the Caribbean

Health, nutrition, and physical activity habits are rooted in the school environment.

Childhood overweight and obesity rates in Latin America and the Caribbean (LAC) are among the highest globally, where nearly four million children under 5 have overweight.¹ The school environment is one of the places where children learn health, nutrition, and physical activity habits. Considering the amount of time children spend at school, it is an ideal place to encourage them to learn and practice healthy habits.^{2,3}

The objectives of this study are:

1. Identify the most effective actions for preventing overweight and obesity in schools, based on a systematic literature review.
2. Identify existing laws, policies, and programmes related to school nutrition and health in 41 LAC countries, and analyze whether they consider the most effective actions to prevent overweight and obesity in the school environment.
3. Explore perceptions regarding the level of implementation of the most effective actions in 21 schools in Chile, Ecuador, and Mexico.
4. Identify the physical activity score in the 21 schools.
5. Make recommendations to strengthen the school environment for the prevention of overweight and obesity among children.

Four effective actions to prevent overweight and obesity in the school environment

Available evidence shows that these are the four most effective actions to prevent

overweight and obesity among schoolchildren in LAC:⁴⁻¹¹

1. Empowerment and behavior change regarding food, nutrition, and health:

by providing educational processes and training for students and the educational community, leading to strengthened capacities and behavior changes.

2. Increased physical activity:

by teaching about its benefits and increasing the time, space and resources allocated to enable physical activity in schools.

3. Healthy school eating standards:

providing high-quality food, both in school meals and school snack shops.

4. Regulations and guidelines to protect the food environment:

including restrictions on unhealthy food advertising, encouraging the availability of fruits and vegetables, and promoting the creation of healthy snack shops with clear nutritional standards.

To be effective, overweight and obesity prevention actions must have a minimum duration of one year and must be designed and guided by specialized human talent. Furthermore, effective actions must engage the entire educational community: students, teachers, parents, and Ministry of Education liaisons.

Table 1. Effective actions to prevent school overweight and obesity in LAC

What needs to be done?	How can it be accomplished?	What is the purpose?	Who should take action and where?
 <p>Provide education to improve nutrition and health knowledge</p>	<ul style="list-style-type: none"> • Modify the school curriculum, including healthy eating and nutrition aspects. • Design educational material that can be used in school or at home, such as stories, brochures, cookbooks, and plays that include content on food and nutrition aimed at children and caregivers. • Train the educational community* through workshops or talks to strengthen knowledge and skills in food and nutrition. 	<p>Investing in food and nutrition education for the entire educational community has the potential to promote behavioral changes and has proved to be effective in preventing overweight and obesity.</p>	<p>This should be implemented by teachers at school, as part of the school curriculum. This requires approval from the Ministry of Education as part of its regulatory or normative framework.</p>
 <p>Facilitate and promote physical activity</p>	<ul style="list-style-type: none"> • Promote physical activity through campaigns that include events with athletes. • Provide physical education classes as part of the school curriculum, taught by certified teachers and accompanied by structured plans to improve strength, endurance, agility, and speed. • Train the educational community through talks or interactive workshops on physical activity or family activities, such as walks or bike rides. • Increase time for physical activity as part of the school curriculum and promote active recesses with dance and music, competitions, and games. • Acquire supplies for physical activity, such as balls, jump ropes, cones, and hula hoops. • Provide adequate infrastructure for physical activity. • Promote classroom activities, extracurricular activities, children's games, and changes to recesses. 	<p>Mandatory physical education classes (moderate to vigorous intensity) at school are the most effective (23 minutes per day) and amount to 40 percent of the World Health Organization's (WHO) physical activity recommendation.</p> <p>There is a link between physical activity and academic achievement among young people. For many children, school physical education classes are the only opportunity for regular physical activity sessions.</p>	<p>Certified physical activity professionals at school should implement this as part of the school curriculum. This requires approval from the Ministry of Education as part of its regulatory or normative framework.</p>
 <p>Establish healthy school eating standards</p>	<ul style="list-style-type: none"> • Develop guidelines that include a list of healthy foods (or a nutrient profile). • Implement clear guidelines for school breakfasts. For example, breakfasts that include fruits and vegetables but no sugar-sweetened beverages. • Regulate the sale of unhealthy foods, including junk food, fast food, sugar-sweetened beverages, and ultra-processed products high in sodium, sugar, fat, and calories. • Include guidelines related to the front-of-pack nutrition labelling. 	<p>Facilitate the control and identification of ultra-processed foods not recommended for children in the school environment and limit their distribution.</p> <p>Nutrition warning labelling systems, like the Chilean system, contribute to healthier decisions.¹²</p>	<p>It is the responsibility of the Ministry of Education and/or Ministry of Health to establish ministerial regulations and monitor their compliance.</p>
 <p>Make changes to the school food environment</p>	<ul style="list-style-type: none"> • Increase the availability of fresh food, such as fruits and vegetables, in school snack shops. • Eliminate the availability of unhealthy foods such as junk food, fast food, sugar-sweetened beverages, and processed and ultra-processed products high in sodium, sugar, and fat. • Ban advertising and sponsorship of the unhealthy food and beverage industry. 	<p>The availability of unhealthy food and beverages in the school environment and advertising aimed at children are associated with childhood overweight.</p>	<p>It is the responsibility of the Ministry of Education and/or Ministry of Health to establish ministerial regulations and monitor their compliance.</p>

*Educational community: principals, teachers, students, family, school snack shop managers.

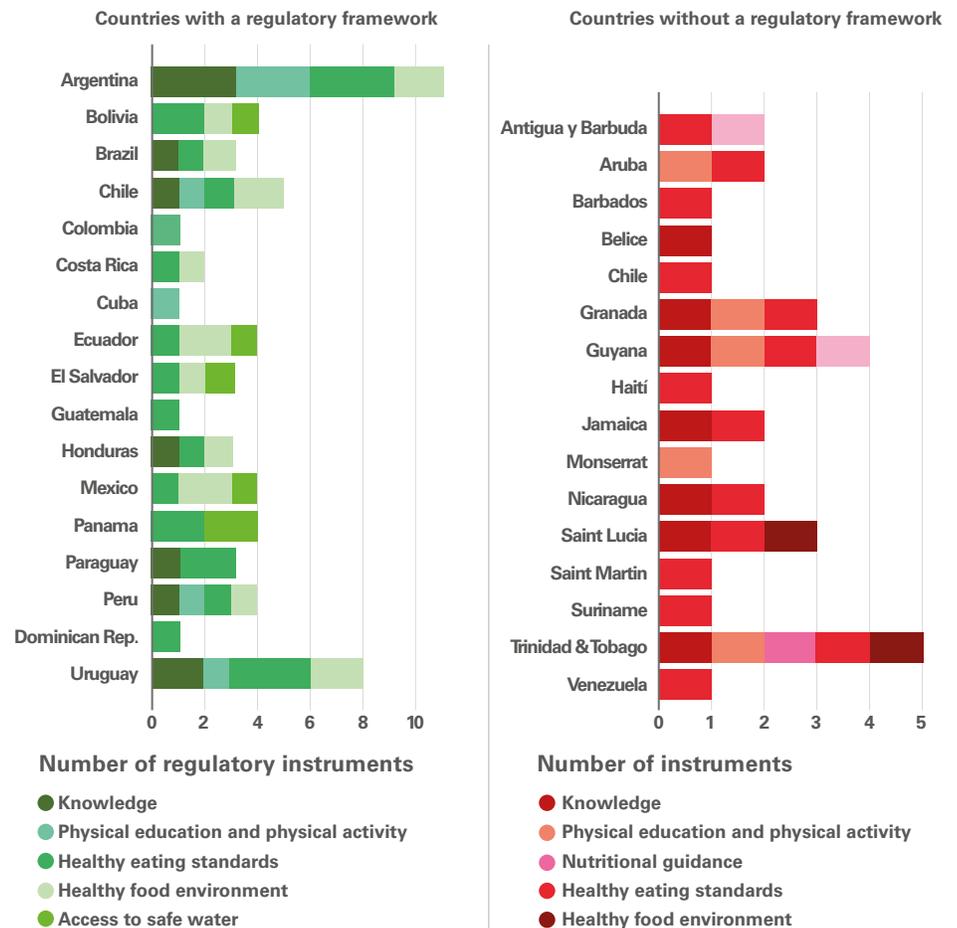
Only 10 countries in Latin America and the Caribbean have regulatory instruments that address at least 3 of the 4 effective actions to prevent overweight and obesity in schoolchildren

A systematic literature review showed that school programmes that prevented increases in overweight and obesity included at least 3 of the 4 effective actions.

The following countries have regulatory instruments along these same lines: Argentina, Bolivia, Brazil, Chile, Ecuador, El Salvador, Honduras, Mexico, Peru and Uruguay (see Figure 1).

A regulatory instrument, such as a law, is more robust than a non-regulatory provision. Instruments such as ministerial agreements, programmes and plans are weaker and run the risk of disappearing, either because they do not have a robust legal framework or because they are not sufficiently sustainable.

Figure 1. Effective actions for the prevention of overweight and obesity considered in regulatory* and non regulatory instruments** in LAC countries.



* Regulatory instruments: Policies, laws, legal regulations, governmental agreements or decrees focused on school meals or health promotion in schools.

** Non-regulatory instruments: Programmes, alliances and other agreements promoted by non-governmental organizations. We didn't find any evidence of instruments to assess in the following countries: Anguilla, Curacao, Dominica, Cayman Islands, Turks and Caicos Islands, British Virgin Islands, Saint Kitts and Nevis, Saint Vincent and the Grenadines.



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Are the most effective actions for overweight and obesity prevention being implemented in schools in Latin America and the Caribbean?

To answer this question, we assessed the current level of implementation of the four most effective actions, as perceived by the educational community. We also assessed existing barriers and opportunities in 21 schools in Chile, Ecuador, and Mexico (seven in each country) during 2018. The study was carried out in Chile, Ecuador, and Mexico because these countries have

instruments that cover at least three of the four effective actions and they also have a nutrition labelling system that is different from the rest of the countries in the region. The means of evaluation used include photovoice methodology; semi-structured interviews with school snack shop managers, teachers, and principals; focus groups with students, teachers, principals, and parents.

N° of participants in the focus groups in Ecuador and Mexico			
Stakeholders/Countries	Ecuador	Mexico	Total
Girls	6	8	14
Boys	6	6	12
Teachers	9	5	14
Parents	6	7	13
Total	27	26	53

Note: Focus groups were not held in Chile because local authorities did not grant the permission required during the time frame of the study. Questions from focus groups and photos from Photovoice from Ecuador and Mexico were included in the seven semi-structured interviews: three with directors, two with teachers and two with snack shop managers.

Implementation of the four effective actions for the prevention of overweight and obesity in schools in Chile, Ecuador, and Mexico

Effective action	Implementation level	Barriers	Opportunities
 <p>Provide education to improve nutrition and health knowledge</p>	<ul style="list-style-type: none"> In Chile, Ecuador and Mexico, there are no systematic training mechanisms for directors, school snack shop managers, teachers, or schoolchildren. In Chile, all directors, teachers, and school snack shop managers have received talks and there are assessment processes that verify the quality of the education provided. <p><i>"I obtained information on the quality of the education provided to schoolchildren through studies, training, the points of view of the quality agency, how they assess us, how they measure us," says a school director.</i></p>	<p>In Ecuador and Mexico, principals and teachers mentioned the lack of financial resources as the main barrier.</p>	<p>Chile and Ecuador have made important progress in providing training and monitoring aspects related to hygiene and food handling in school snack shops.</p>
 <p>Facilitate and promote the practice of physical activity</p>	<ul style="list-style-type: none"> Schools have the tools and human resources to teach physical education classes (see Figure 2). However, there was no evidence that physical activity and exercise follow a specific structure or that there are curricular plans to achieve an energy balance in schoolchildren. <p><i>"Physical education is basically going out to play," says a schoolteacher in Mexico.</i></p> <ul style="list-style-type: none"> Chile obtained the highest score according to the PAFE questionnaire, followed by Ecuador and Mexico (see Figure 2). 	<p>Time constraints and limited human resources to plan, teach and comply with the entire curriculum, including physical activity. There are no specialized physical education teachers.</p>	<p>Physical activity is a widely accepted practice for boys and girls.</p>
 <p>Establish healthy school eating standards</p>	<ul style="list-style-type: none"> There are nutritional standards for food distribution and provision in the three countries, but they are not fully met. Monitoring deficiencies were also reported in Ecuador, and lack of monitoring in Mexico. In Chile and Ecuador, it was easier for the educational community to identify healthy foods using nutrition labelling. <p><i>"Even the package should say it is high in sugar ... oh yes, the traffic light is right," says a girl in Ecuador.</i></p> <p><i>"This is pure junk, this has a juice with seals that says high in calories and the chips are high in sodium ... bad! Nothing good," says a snack shop manager in Chile.</i></p> <ul style="list-style-type: none"> Foods and beverages high in sugar, salt, fat and calories were widely available in Ecuador and Mexico. Unhealthy foods available in school snack shops displace foods from school feeding programmes. 	<p>Lack of a regulatory framework that regulates food sale. Also, lack of clear mechanisms to contract and manage school snack shops.</p> <p>There are no clear oversight guidelines nor information on penalties. The educational community is responsible for monitoring, rather than the central regulatory entities.</p>	<p>In Mexico, the recent implementation of front-of-pack nutrition warning labelling is an opportunity to identify products that should not be part of the school environment.</p> <p>Chile and Ecuador have clearer standards on what foods are allowed for schoolchildren, thanks to their front-of-pack labelling.</p>
 <p>Make changes to the school food environment</p>	<ul style="list-style-type: none"> Important advances have been made in eliminating unhealthy food advertising and the industry's school sponsorship in Chile, Ecuador, and Mexico. <p><i>"There is no food or beverage advertising" explains a school director in Mexico.</i></p>	<p>In several countries, current regulations prohibit advertising any type of food in school environments. This is a barrier to promoting healthy foods and beverages.</p>	<p>Advertising and promoting healthy foods offer an opportunity to provide information and promote a good diet.</p>

Physical activity score in participating schools in Chile, Ecuador and Mexico:

A physical activity assessment was carried out in each school, using the “Physical Activity School Score”¹³

The Physical Activity School Score allows assessing physical activity at school and provides a score ranging between 1 and 3 for each of the eight items assessed:

1. Physical education is a school requirement.
2. There are specialized physical education teachers.
3. In addition to a lunch break, there is a recess.
4. There is an active recess characterized by the provision of equipment, a playground and trained supervisors.
5. The school provides opportunities to participate in physical activity (before, during and after the school programme).
6. The school supports active transport to and from school (such as walking or biking).

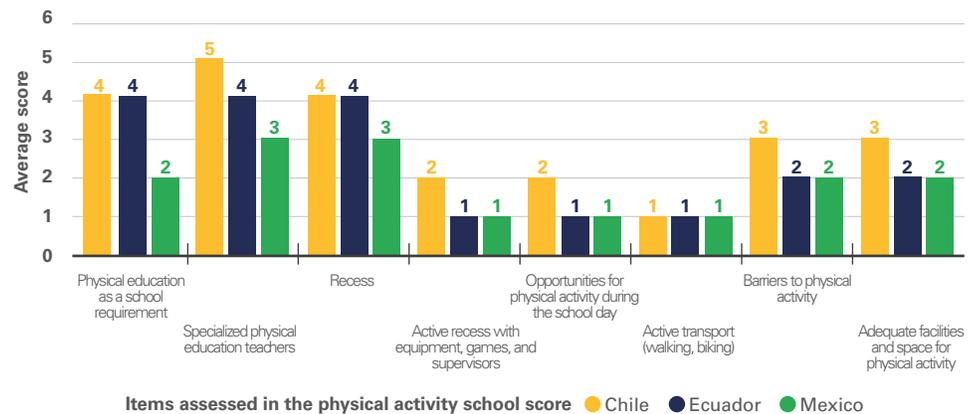
7. There are barriers to physical activity.
8. The school has adequate facilities and space for physical activity.

The results showed that, in general, the three countries have a certain number of elements that lead to physical activity at school. The most notable aspects include requiring that all students receive physical education, having specialized teachers in this matter, and providing a recess in addition to the lunch break. The results also showed that the three countries could improve the school environment and make it more conducive to physical activity by including an active recess, increasing opportunities for physical activity before, during and after the school programme, and promoting active transportation to and from school.

Chile performed better than Ecuador and Mexico in several aspects such as specialized physical education teachers, adequate infrastructure, and fewer barriers to physical activity.



Figure 2. Average physical activity score of participating schools in Chile, Ecuador, and Mexico.



Interpretation of each item:

For items 1 to 3, the scores are interpreted as follows: 0 and 1=needs improvement, 2 to 4=good, 4 and 5=excellent .
For items 4 to 8, the scores are interpreted as follows: 0 and 1=needs improvement, 2=good, 3=excellent.



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Recommendations for preventing overweight and obesity in the school environment

- **It is recommended that the Ministries of Health and Education strengthen the regulatory frameworks that govern the availability of unhealthy food in the school environment**, for example, policies, laws, regulations, government agreements or decrees focused on school meals and health promotion in schools. These instruments establish a robust legal framework. Regulatory frameworks must be accompanied by standards on the availability of healthy food in the school environment. It is recommended to follow the framework based on PAHO's nutrient profile.¹⁴
- Regulating advertising and sponsorship of unhealthy foods is a positive advance in some countries of the region. However, current regulations in some countries prohibit advertising all types of food; therefore, **it is recommended that the statutes are reviewed to allow healthy food advertising**. At the same time, **it is recommended that solid measures are put in place to address conflicts of interest in the administration of school snack shops**.
- **It is recommended that the Ministries of Health implement an easy-to-understand front-of-pack nutritional labelling system**. These have been useful instruments to define the guidelines for the school feeding programmes and food sale in school snack shops in Chile and Ecuador.
- **In Chile and Ecuador, the Ministries of Health and Education should create or strengthen a central structure to oversee, monitor and evaluate current policies**.
- Prioritize the four most effective actions to prevent overweight and obesity in school health plans and ensure funds are allocated for their implementation.
- It is recommended that all countries in the region prioritize these actions in their overweight and obesity prevention plans.
- It is recommended that schools use the Physical Activity School Score to monitor progress in setting or strengthening measures that facilitate physical activity in the school environment.



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