



Policy-Relevant Paper

It is time: free meals at schools for all

Abstract

The link between school feeding programmes (SFP) and the promotion of healthy eating and health is being explored in studies performed in different countries. The coronavirus disease-19 pandemic has revealed flaws and weaknesses in contemporary food systems, with many school-age children experiencing food insecurity and hunger. There is intense debate among policymakers regarding whether government SFP should be universal or targeted. Countries such as Brazil and India, which have two of the most comprehensive universal free-of-charge programmes, have shown the benefits of SFP, including improved nutritional status, support for more sustainable food systems, attendance and academic performance. Evidence shows and supports actions advocating that it is time to offer healthy and free school meals for all students.

Keywords: Food policy: Nutrition assistance programmes: School meals: Food security

Healthy dietary habits, starting early in life, are the foundation for good nutrition, health and development during childhood and beyond. School food programmes or school feeding programmes (SFP) are receiving increasing attention as important drivers of healthy eating and academic performance. Therefore, multiple policies have been adopted in different places to offer food and meals to students.

There is intense debate between policymakers and government SFP that should be universal *v.* targeted for those who need it^(1–3). In different countries, such as England and the USA, the debate intensified during the coronavirus disease (COVID-19) pandemic^(4,5). Although most studies reached their conclusions based on assessments of more than one dimension of the SFP, such as academic performance, equity, acceptability and food supply, this was still not enough to convince policymakers of the importance of free meals for all students^(3,6).

Many countries provide free school meals in disadvantaged regions or for students from low-income families, while charging for meals for other students. These SFP are generally more focused on primary and public schools and offer meals, and more than 90 % aim to meet nutritional and/or health targets. In school meals, prepared at school is the most common modality of food delivery (80 % of countries)⁽⁷⁾.

The school food environment is known to present a strategic opportunity to improve children's dietary intake on a large scale by offering free meals that are accessible to all students⁽⁸⁾. This can be part of the educational process and drive important changes in the food system, in addition to what SFP reach children and adolescents at a population scale across socio-economic classes and for over a decade of their lives⁽⁹⁾. From this perspective, we present evidence of the benefits of a universal SFP and ways to regulate these programmes.

The view from the global south

A small number of countries offer SFP with free meals for all students, usually developed countries with small populations or limited territorial extensions. For this reason, we decided to

analyse Brazil and India's programmes, as they are the seventh and first countries in the world in terms of population, respectively, and have the two of the most comprehensive-free SFP for all students, based on federal legislation that establishes criteria for the provision of school meals^(3,7).

The case of Brazil

Brazil has one of the largest SFP in the world, the Brazilian School Food Programme (*Programa Nacional de Alimentação Escolar*, PNAE), with universal access and offers at least one free meal during students' stay at school. Originating in the 1950s, the PNAE provided meals with strong and time-to-time updated nutrition guidelines that prioritise the offer of fresh or minimally processed foods and meals based on them and limits ultra-processed foods to guarantee healthy meals for students⁽¹⁰⁾. The programme provided at least 20 % of the nutritional needs of part-time students⁽¹⁰⁾.

The PNAE is the only programme that guarantees free meals for all levels of education, from kindergarten to high school (basic education), in Brazilian public schools (corresponding to 80 % of the students enrolled). In addition, at least 30 % of the federal budget is used to purchase food from family farms. In 2015, PNAE purchases from family farming contributed nearly 457 million USD⁽¹¹⁾.

Recent evidence suggests a positive impact on students' diets. PNAE positively affects the overall quality of diet, increases the consumption of food indicators of healthy eating habits and decreases the consumption of unhealthy food indicators⁽¹²⁾.

A study that compared the diet of adolescents who attended schools without food offered by the PNAE (private school) with those who provided meals by the PNAE (public schools) showed that Brazilian adolescents in schools without PNAE were more likely to consume regular (≥ 5 times/week) ultra-processed salty foods and soft drink⁽¹³⁾. Furthermore, children who consumed two or three school meals daily showed a higher consumption of fresh and minimally processed food and a significant decrease in ultra-processed food compared with students who did not consume school meals⁽¹⁴⁾.



Two studies with representative samples of Brazilian children and adolescents demonstrated that eating meals offered by public schools improved the nutritional status of Brazilian children^(15,16). Adolescents with high adherence to school meals (5 times/week) had a 0.10 lower BMI Z-score, 11% lower prevalence of overweight and 24% lower prevalence of obesity than those with lower adherence⁽¹⁶⁾.

The case of India

India is the second most populous country in the world, and the mid-day meal (MDM) programme is the largest SFP in the world, covering over 100 million children. MDM provides a free cooked meal with a minimum energy content of 450 kcal and 12 g of protein to children in government and government-assisted primary schools and 700 energy content and 20 g of protein/d per student for upper primary schools. The programme aims to improve school attendance and retention and the nutritional status of primary school children⁽¹⁷⁾. In addition, MDM recommends the provision of adequate amounts of micro-nutrients such as Fe, folic acid and Zn to complement school health and other health programmes⁽¹⁸⁾.

MDM exposure for nearly 5 years in primary school increased test scores by 18% for reading and 9% for math, relative to children with less than a year of exposure, showing a positive effect on learning achievement⁽¹⁹⁾. The programme had a large effect on net enrolment, which increased by 16–19%, and the effect was larger for socially disadvantaged groups⁽¹⁹⁾.

There are few papers on the impact of MDM on the nutritional status and food consumption of primary school students. A study that investigated the intergenerational nutritional benefits of the programme found that investments made in school meals in previous decades were associated with improvements in future child linear growth, and the MDM was associated with 13–32% of the eight-for-age Z-score improvement in India from 2006 to 2016⁽²⁰⁾.

In this context, a theoretical framework was developed to summarise the evidence for the benefits of free school meals (Fig. 1).

School feeding programme promotes sustainable feeding and food and nutrition education

Among other food and nutrition policies, the SFP is noteworthy for its sustainable potential and for promoting food and nutrition education. Climate change has placed the sustainability of the global food system and its contributions to feeding the world's population at the centre of debate⁽²¹⁾. SFP have emerged as important contributors to the development of sustainable food systems, which can change the relationship between future generations and food and the environment⁽⁹⁾ if they reach all students.

In this context, the following aspects stand out: SFP to be state led gives it reach, legitimacy and implementation capacity, and its reach populations are at risk of food insecurity and malnutrition in all forms (undernutrition and obesity), which is why it is important to implement a universal policy. Lastly, SFP is

a systemic (instead of segmental) food supply chain that allows structural changes throughout the entirety of the food system, which contributes to the food security of both the producer and the consumer, who is the student⁽²²⁾.

SFP designed to consider the food source, with the addition of a local supply component, have the potential to benefit entire communities by stimulating local markets and family farmers, facilitating agricultural changes and enabling households to invest in productive assets^(7,11).

Thus, sustainable SFP development is possible, regardless of the size of the state or country. The mandatory purchase of family farming or a popular and solidarity economy through laws is a strategy that not only supports family farming by connecting farmers with a secured market with pre-negotiated prices but also increases the amount of local and fresh products available in school menus⁽²³⁾. Different Latin American countries, such as Ecuador, Guatemala and Honduras, have included the obligation to buy food locally in their SFP, encouraging family farmers and the poor and vulnerable sectors of the population⁽²⁴⁾.

A systematic review verified the recommendations on sustainability in school feeding policies and practices adopted in schools and found that recommendations for purchasing sustainable food (organic, local and seasonal), nutrition education focused on sustainability and food waste reduction were frequent⁽²³⁾. The relationship between sustainability and the SFP also occurs at the decision level at all stages of meal production, including menus.

Although the SFP predisposes to sustainability, it is essential to have regulations that guide and encourage sustainable and interdisciplinary practices.

Food practices are influenced by many biological, social, psychological and environmental factors^(25,26). Knowledge about food is only part of the reason for eating choices⁽²⁵⁾, and experiences with food play an important role as humans come to like food through associative conditioning, both physiologically and socially⁽²⁷⁾. Repeated exposure to healthy foods leads to increased familiarity and acceptance⁽²⁸⁾. Food choice is also subject to availability, affordability and accessibility, as one can only choose between what is available, financial and physically accessible⁽²⁹⁾. Thus, school meals are an inherent part of food and nutrition education as they promote exposure to and access to healthy food, providing opportunities to practice and experience what is learned in the classroom.

The efficacy of nutritional education interventions also depends on environmental factors. Longer interventions with focused goals, involving teachers and offering environmental opportunities to practice content learnt in theoretical classes were found to be more effective^(30,31). As food choice is heavily determined by food availability, offering healthy free school meals along with educational and theoretical approaches in the classroom can lead to changes in eating practices⁽⁶⁾.

Food and nutrition education is the key strategy to promote food security, work to overcome inequalities and advocate for the Human Right to Adequate Food, recognising that good nutrition is the foundation for human health, well-being and physical and cognitive development⁽³²⁾. Since food and nutrition security is central to individual dignity and human rights, Brazil has included in its constitution the Human Right to Adequate



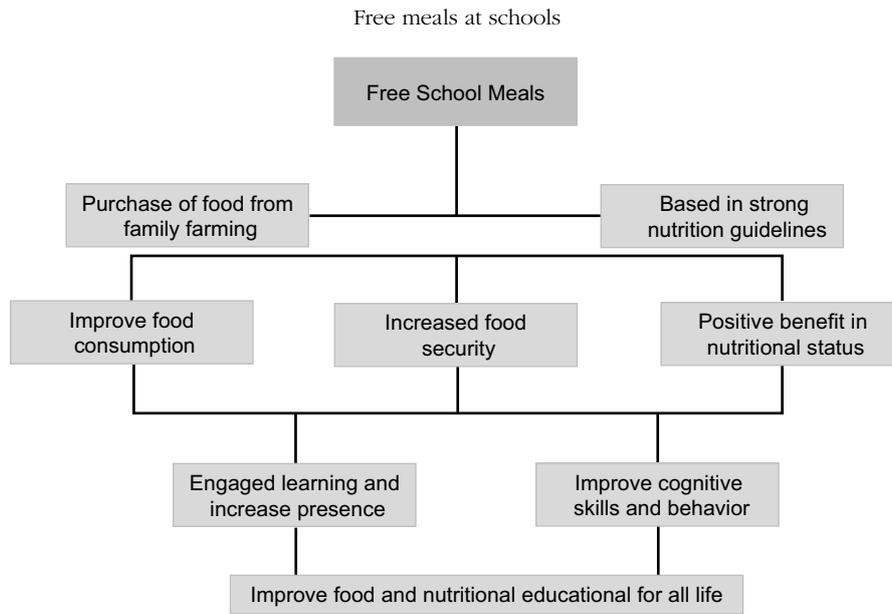


Fig. 1. Conceptual framework of the benefits of free school meals.

Food and the right to school meals for all students in basic education. This is important to create the necessary foundation for the development of public policies for sustainable food systems^(33,34).

Why free meals at school?

Children spend a considerable part of their day at school, and offering free meals for everyone can be a great tool for learning about food, eating and achieving food and nutrition security⁽³⁵⁾.

Eating habits develop at an early age, and healthy eating habits formed during childhood are more likely to persist throughout life⁽²⁸⁾. The SFP can offer not only healthy meals but also opportunities for food and nutrition education that represents a huge opportunity for children and adolescents to learn about healthy and sustainable food practices⁽⁹⁾.

Evidence from the two largest SFP in the world that offer free meals for all students shows that policies can improve targeted dietary intake⁽¹²⁾, nutritional status^(15,16), learning achievement⁽¹⁷⁾ and school permanence^(17,36). These findings highlight the positive impact of universal free meals on schools.

The Brazilian PNAE is an important case because it changes the concept that SFP in middle- and low-income countries only aim to alleviate food insecurity and implement nutritional guidelines to develop healthier eating habits to establish positive dietary habits for the future^(10,37).

A systematic review that examined universal free school meals found that offering at least one lunch per day to students was positively associated with diet quality, food and nutrition security and academic performance; however, when the offer was restricted to free breakfast, the effect was uncertain⁽²⁾. Furthermore, no studies have considered the cost of maintaining large databases, usually based on family income, updated regularly to determine which students are eligible to receive free school meals and the social implications of creating paying and non-paying groups of students⁽²⁾.

The major challenge in implementing free school meals is creating SFP guidelines to meet each country’s nutritional needs, food culture and ensure the provision of healthy foods in schools.

The COVID-19 pandemic has generated a new food insecurity crisis⁽³⁸⁾, increasing global hunger by 120 million, and it is estimated that between 690 and 783 million people worldwide have faced hunger⁽³⁹⁾. During the pandemic in most countries, schools were closed, but SFP responded actively and often with great agility to a crisis, temporarily changing their modality of providing food to students and helping to ensure food security for families and communities⁽⁷⁾. Therefore, we argue that the SFP can make a significant contribution to the definition of a resilient food system that enables, promotes and enhances well-being. Now is the ideal moment for international organisations, such as the FAO and WHO, to recommend the adoption of a universal SFP.

Conclusion

Schools are levers for social change, and students must eat while in school. Thus, a positive meal experience can be created in this environment.

The world faces severe public health consequences from our current food system, facing different kinds of malnutrition and ecological destruction, so it is important for all students to receive food and nutrition education (such as food gardening and cooking at school) and receive healthy and socially referenced meals in school (e.g. using foods from family farmers, which considers the local cultural aspects). As students get older, they will understand the consequences of food supply. The implementation of free SFP can greatly enhance and improve the quality of life of millions of children and adolescents worldwide.

These are extraordinary times, the world facing major global challenges, the search for political consensus cannot keep us from proposing solutions that can effectively support major

changes in our food system. Currently, it is time to offer healthy and free meals in schools for everyone to contribute to the dietary quality and health of children and adolescents, sustainable healthy food systems and the planet.

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