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Learning from the strengths of health care in schools in Brazil & opportunities for contemporary global school health

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ABSTRACT

Most children and youth around the globe spend some time in school. Therefore, schools are essential for health, learning, and engaging families. School health models and programmes vary worldwide, some with strengths and weaknesses. This perspective highlights the strengths of school health in Brazil and identifies opportunities for global school health in the twenty-first century. We discuss implications for global school health practice, policy, and opportunities for school health innovation. Four opportunities were identified and discussed: (1) Standardizing the Role of Community Health Workers in Schools, (2) Accelerating School-Based Evidence-Based Programming, (3) Strengthening School-Based Care Coordination to Address Adverse Social Determinants of Health & Learning, and (4) Optimizing Health Information Systems in Schools and Data Sharing.

KEYWORDS

Global school health; school health; Brazil; community health workers; school nurses

SUSTAINABLE DEVELOPMENT GOALS

SDG 1: No poverty; SDG 3: Good health and well-being; SDG 4: Quality education; SDG 10: Reduced inequalities; SDG 16: Peace, justice, and strong institutions

Introduction

Children and youth in Brazil represent about 24% of the total population, totalling around 51 million children and youth (Unicef, 2023). Despite many social, health, and technological advancements made in Brazil, several challenges persist for Brazilian children and their families, including high rates of violence, food insecurity, low vaccination coverage, and school dropout. Black, poor, Indigenous, and quilombola *(a community of fugitive enslaved Africans)* populations bear the brunt of these issues due to the legacy of slavery, racism, and systemic poverty (Dantas-Silva et al., 2023). Amid these threats to child health and quality of life, **Brazilian K-12 schools serve as an essential safety net** for children and youth with significant vulnerabilities to safeguard their health and learning. We can gain valuable insights from the strengths and challenges of Brazil's school health system, defining directions for enhancing school health initiatives worldwide. This perspective highlights the strengths of Brazil's school health system, identifies opportunities for global school health innovation, and proposes actionable strategies aligned with sustainable development goals (SDG) 3, 4, 10, and 16.

School health in Brazil

The *Programa Saúde a Escola (PSE)* (Health in Schools Program) is an intersectoral initiative jointly managed by the Brazilian Ministry of Health and Education, embedded in Brazil's

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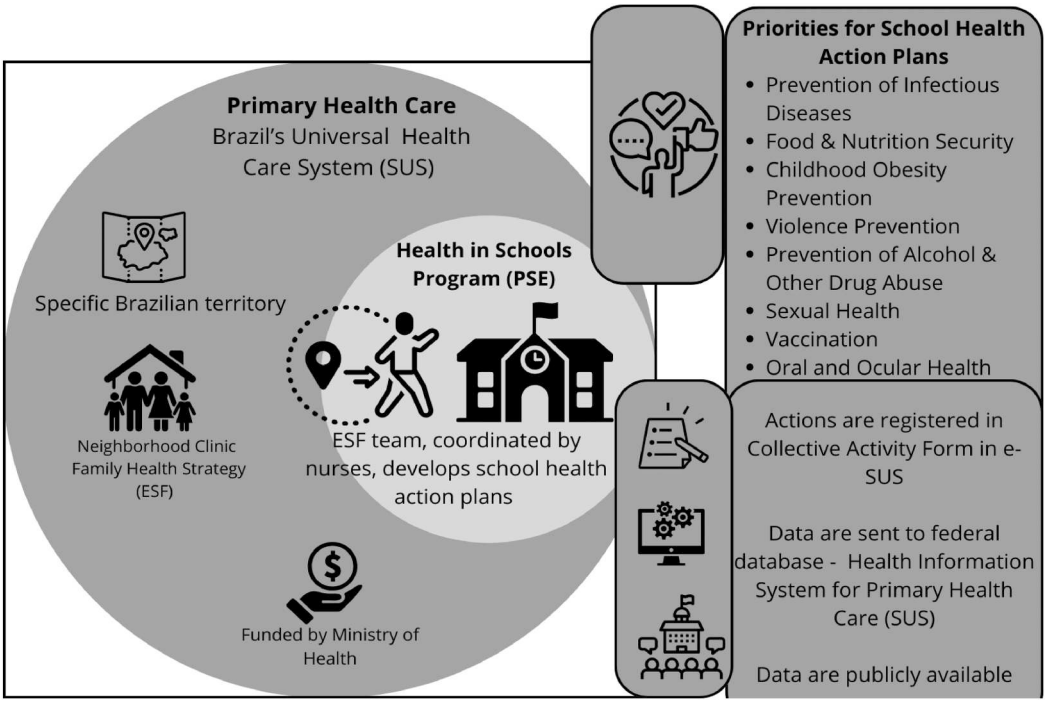

Figure 1. *Estratégia Saúde na Família (ESF)* teams (doctors, nurses, community health workers, psychologists, dentists, and nutritionists) integrated in schools under Brazil's School Health Model, *Programa Saúde a Escola (PSE*) and supported by Brazil's universal primary health care system (SUS) and e-SUS data systems.

universal primary healthcare delivery system, *Sistema Único de Saúde (SUS*), and delivered through a programme called *Estratégia Saúde na Família* (ESF) (*Family Health Strategy*) by health teams in SUS's neighbourhood primary care clinics (See Figure 1). The main goals of *PSE* are to promote health, strengthen ties between the health and education sectors, advance health and learning equity, and engage local communities in policy and advocacy related to child and adolescent health (Fernandes et al., 2022). The Ministry of Health provides financial incentives to Brazil's numerous municipalities to neighbourhood clinics that operate *ESF* and implement school health activities within the *PSE*. The goals of the *PSE* are accomplished through interdisciplinary healthcare teams consisting of doctors, nurses, nutritionists, psychologists, dentists, and community health workers within *ESF* who are responsible for primary care for the entire community in the clinic's catchment area, including schools. Once the care team conducts a needs assessment and defines health and social needs priorities, the *ESF* team develops school health action plans and implements them, leveraging the clinical expertise of doctors and nurses and evidence-based programming. The nurse serves as the care coordinator, working alongside community health workers, providing clinical care, and managing and overseeing the team's school-based activities. *PSE's* current prevention and promotion efforts and priorities involve the prevention of infectious diseases (i.e. Dengue, Chikungunya, Zika, and Sexually Transmitted Infections), childhood obesity, violence and bullying, alcohol, tobacco, and other drug abuse and the promotion of food and nutrition security, oral and ocular health, and citizenship. Continued funding for the *PSE* depends on achieving the goals of the school health action plans, and evidence of the continuity of actions through shared responsibility brokered and managed through an advisory team called *Intersectoral working groups* found in each municipality. In 2022, *PSE* was present in 97% of the Brazilian territory, demonstrating the legitimacy and strength of its work in health promotion. High

participation reflects a considerable acceptance by municipalities, with the promise of continuous expansion and improvement (Fernandes et al., 2022).

Sharing of school health data in Brazil

Brazil's universal health care system (SUS) is supported by its nationwide electronic health record system called e-SUS. The *Health in Schools Program's* screening, care coordination, programming, and treatment activities are input into the system by the ESF health teams at the municipal level through a form called the Collective Activity form in e-SUS. These data are sent to a federal database named *Health Information System for Primary Care (Sistema de Informação em Saúde para a Atenção Básica*). Experts validate the data, and non-restricted data and reports are publicly available. e-SUS data can give us insights into the successes and challenges of implementing school health programming. For example, a cross-sectional study examining e-SUS data from 2014 to 2019 showed a 65% increase in health actions to address vision in schools (Fernandes & Koptcke, 2021). Data on sociodemographic characteristics are also collected through e-SUS to identify potential ethnic, gender, and socioeconomic disparities and develop precise interventions to advance equity (Ministry of Health, 2024).

Impact of Programa Saude a Escola (PSE) on school and child health

PSE has been shown to increase access to health care services, prevent visual impairment and blindness in children and adolescents (Fernandes & Koptcke, 2021), reduce health inequities, and improve quality of life through nurse leadership (Silva et al., 2021), and strengthen partnerships with other sectors and care coordination (Rumor et al., 2022). Nonetheless, challenges remain. Action plans are fragmented, with actions limited to the education and health sectors and limited integration in addressing poverty-related conditions and adverse social determinants of health and learning (DallaCosta et al., 2022), and their implementation can be limited due to the high demand for programming but limited resources and a lack of awareness of evidence-based programming. Furthermore, geographic barriers, particularly in the northern states like Amazonas, hinder the implementation of the PSE programme. These challenges must be more clearly understood and addressed to improve the programme's quality throughout Brazil (Baroni & Silva, 2022; Rumor et al., 2022).

Opportunities for global school health

As a global health community, the strengths and challenges within Brazil's school health system offer opportunities to identify how to better support global school health. Key recommendations include:

I. Standardizing the Role of Community Health Workers in Schools

Community health workers (CHWs) are trusted public health workers known to provide social needs care and drive improvements in health outcomes through care coordination and outreach efforts (Ibe et al., 2023). CHWs in Brazil (*agente comunitario de saude*) are trained state employees working full-time and salaried (at least minimum wage) and have full benefits and rights as other state employees (i.e. right to form a union). CHWs in Brazil operate within the Family Health Strategy (ESF) teams housed in neighbourhood clinics and funded and supported by federal funding (Ballard et al., 2021). They are instrumental in helping to achieve the actions outlined in school action plans through their advocacy, outreach, health education, and connecting students and their families to much-needed resources. Unlike Brazil, CHWs in other countries are supported and paid through varying payment models, which threatens the ability to have a sustainable

workforce model, and their role in schools is not well understood (Harries et al., 2023). Strengthening the legal and financing system for global CHWs can help set a strong foundation for developing standardised CHW-involved school-based care models needed to achieve the targeted global Sustainable Development Goals 2030, which includes advancing equity, health, and well-being for all ages and cultivating robust educational systems (Perry & Hodgins, 2021).

II. Accelerating School-Based Evidence-Based Programming

There is a significant global need for evidence-based programming beyond routine school-based activities like vision screening to support out-of-school time health activities. Programming addressing nutrition, school violence, bullying, school absenteeism, and mental health are global school health priorities that will require a multidisciplinary approach that is grounded in theory and culturally appropriate. One signature evidence-based programme in Brazil is the *Programa Bolsa Familia* (Campello & Neri, 2014). *This anti-poverty program* consists of a conditional cash transfer programme for families with children and youth living in poverty. Health and education requirements must be met for participation to support school performance, and indeed, the programme has been shown to reduce the gap in school performance between the rich and the poor.

III. Strengthening School-Based Care Coordination to Address Adverse Social Determinants of Health & Learning

Brazil's universal health care system provides a source of strength to school health in Brazil. Still, there are shortfalls in leveraging this universal funding support to address poverty-related issues, i.e. food insecurity, transportation, and other adverse social determinants of health and learning. In the US, school-based health centres and community schools are funded primarily by state and federal funds in the absence of a universal healthcare system, and most healthcare services in schools are provided, including care coordination to address adverse social conditions. Although care coordination for social needs is crucial in supporting student outcomes, it must be integrated into school health payment models for sustainability (Francis et al., 2021).

IV. Optimizing Health Information Systems in Schools and Data Sharing

Brazil's *national e-SUS program* undergirds Brazil's *Health in Schools* programme. e-SUS is a platform for shared health data from schools and neighbourhood clinics that allows for better case management and programme evaluation of the school's health action plans (National Association of School Nurses, 2024). Robust evaluation can optimise the tailoring of programmes and lead to new programme development and implementation to improve student health and learning outcomes. Although many schools in the US have an electronic platform or system to house student health data, legal challenges due to the Family Educational Rights and Privacy Act (FERPA) and the Health Insurance Portability and Accountability Act (HIPPA) Privacy Rule make sharing of student health with parties that can help to develop data-informed health strategies particularly challenging (Francis et al., 2021). Furthermore, care coordination activities are often undocumented, and there is no follow-up to ensure that students receive services and benefit from them.

Implications for school health practice and policy

Brazil's school health programme demonstrates how intersectoral partnerships, standardised workforce roles, and robust health information systems can advance child health and learning equity. It also exposes the global need to prioritise increased access to school health professionals like nurses and community health workers and support these roles within a robust healthcare system where

culturally responsive, evidence-based programming and social care integration are championed. By addressing the challenges of Brazil's school health programme, its model serves as an exemplar for global school health to achieve the SDG targets.

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