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## Editorial

## School-Based Health Centers: At the Intersection of Health and Education



School-based health centers (SBHCs) have emerged over the last 50 years as a cost-effective service delivery model that improves health care access and outcomes for youth, particularly those in underserved communities [1,2]. There are more than 2,500 SBHCs throughout the U.S., providing access to care for approximately 10% of public school students on or near their school campuses [3]. SBHCs provide primary and preventive health care, often in combination with mental health, reproductive health, vision, and dental care, as well as broader services to the school community through youth development programs, health education, and school staff supports [4].

By bringing health services to the school setting, where youth spend a large portion of their time, SBHCs overcome barriers that prevent youth, especially the most vulnerable, from receiving needed health care services, including transportation, time, costs, and confidentiality concerns. In fact, minority youth have been found to use SBHC services more frequently than other community health delivery sites, particularly mental health care [5]. Yet, the placement of SBHCs in schools introduces a level of accountability that other pediatric and adolescent health providers are seldom held to—demonstrating their impacts on youth's educational achievements. Despite the existing research showing the impacts of SBHCs on academic outcomes, including saved classroom instruction time, improved grade point averages, and reduced disciplinary actions [1], many stakeholders in both the health and education fields continue to wonder if SBHCs can more directly document their academic impacts and justify their presence in schools.

SBHCs by design are often located in higher needs areas where communities face significant barriers. Recent data show that SBHCs serve schools with higher proportions of socially and economically disadvantaged youth compared with schools without SBHCs [3]. These youth also have disproportionate academic experiences [6] because of structural inequalities that are far beyond the scope of what SBHC services can influence, which makes the burden of demonstrating impacts on educational success, in addition to health outcomes, an even greater challenge. Researchers have historically struggled to conduct studies linking SBHCs to improvements in youth's academic outcomes largely because of methodological challenges of small sample sizes, inherent differences in SBHC users and nonusers, and issues linking health and education data that are each protected by separate federal regulations (the Health Insurance

Portability and Accountability Act for health data and the Family Education Rights and Privacy Act for education data) [4]. However, there is a growing body of research that moves away from looking at individual-level effects and focuses on school-level effects. School-level studies have their own challenges, mainly the lack of ability to control for external or unobserved factors, and findings have been mixed [1,7–9]. Yet, the desire for a more rigorous study in this area persists.

In their article, Westbrook et al. [10] take a school-level approach to assessing SBHCs' effects on high school graduation rates. Using public data from Colorado high schools that opened SBHCs over an 18-year period, they found that SBHC schools showed a larger percentage increase in graduation rates, with larger increases in male graduation rates, in particular. Although the differences detected were modest, their study design lays a framework for future studies to refine and replicate, and their findings help to potentially strengthen the argument that SBHCs can contribute to educational achievement.

The schools that Westbrook et al. studied had larger minority and free and reduced lunch eligible populations and lower graduation rates before SBHCs opening, similar to SBHCs nationwide. The fact that they found increases in graduation rates in these schools advances the knowledge of potential contributions of SBHCs in decreasing inequalities. Further inquiry into the effects on graduation rates among ethnic groups would be helpful if these data were available.

Westbrook et al. also found that male graduation rates increased significantly, but not female graduation rates. Recent data show that high school SBHC users are more likely to be female [11–13], which would lead to the hypothesis that observed effects should have been larger among females. Although it was not within the scope of their study to explore explanations for these effects, it would be interesting to examine the relationships between services offered and service utilization by gender and academic outcomes.

This highlights a chronic challenge that has plagued SBHC research, which is defining exposure to the intervention. There can be great variation in the types and dosages of interventions that each SBHC offers, from varying hours when medical, mental health, and other providers are available to the degree of coordination of care between providers or integration into the school campus, as well as in the specific interventions that individual youth receive

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from the SBHC. This variation must be acknowledged and accounted for in any analysis of impacts on academic outcomes to help clarify the intricacies of the relationships between SBHCs and education.

The work of Westbrook et al. provides a meaningful contribution to the literature by looking at graduation rates before and after SBHCs were opened over a nearly 20-year period. They raise important directions for future inquiries to take, including to “unpack the mechanisms through which SBHCs influence educational outcomes” and determine which services and demographic characteristics influence these mechanisms.

The health care and education landscapes are changing rapidly, especially due to the coronavirus 2019 disease pandemic and resulting school closures, which have exacerbated disparities in both arenas. As policymakers decide how to allocate scarce resources in the future, research on the contributions of SBHCs to both health and education can strengthen the evidence base needed to justify investments into SBHCs’ maintenance and expansion to support youth and address inequities.

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