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Examining the Role of School-Based Health Centers in Improving Mental Health Outcomes for Tennessee Students

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Introduction

Depression, anxiety, and suicidal ideation have been increasing among children nationwide and in Tennessee, with rates of diagnosed conditions increasing substantially since 2007. In more recent years, the pandemic exacerbated mental health struggles for children, with national estimates suggesting that rates of depression and anxiety symptoms in children have doubled since early 2020.

Additionally, the latest Vanderbilt Child Health poll found that half of Tennessee parents rate their children's emotional well-being as a top concern. Although these trends have been observed among children nationwide, Tennessee ranks 41st in the 2023 State of Mental Health in America report on measures of access to mental health care for youth.

Schools are a key institutional entry point to mental health services for youth, with estimates suggesting that more than half of adolescents first access mental health services in an educational setting. In Tennessee, school-based (or school-linked) health centers (SBHCs) have been expanding rapidly and targeting areas with higher proportions of low-income and underserved children, including rural areas. Yet there are significant gaps in our knowledge of the effectiveness of SBHCs in improving the mental health and education outcomes of children.

Like many places, Tennessee is reckoning with limited mental health treatment capacity. In response, school districts in Tennessee have expanded their capacity to identify and respond to students' mental health needs, using the state's Coordinated School Health approach supplemented by state and federal grants. However, changes to school funding at the state level and the end of federal Elementary and Secondary School Emergency Relief (ESSER) Funds may alter the ability of schools to sustain this level of support for students.

1 Notwithstanding any Tennessee Department of Education (TDOE) data or involvement in the creation of this research product, the TDOE does not guarantee the accuracy of this work or endorse the findings. Any errors are the sole responsibility of the author(s).

Given this context, Tennessee state agencies have partnered with Vanderbilt University researchers to examine how mental health diagnoses have shifted over time, which students are likely to have mental health needs in Tennessee, and whether and how SBHCs improve mental health outcomes among school-aged children in Tennessee.[1]

Key Findings:

1. ***Rates of diagnosed mental health conditions (ADHD, anxiety, depression, bipolar disorder, self-harm, suicide ideation or attempt) among low-income, Tennessee public school students have been progressively increasing throughout the state.***
2. ***Tennessee students who are chronically absent and more likely to have experienced school disciplinary actions, as well as students with special educational needs and those who are homeless, are more likely to be diagnosed with a mental health condition.***
3. ***On average, Tennessee school districts that introduced school-based health centers saw a 7% reduction in the diagnosis of mental health conditions among low-income students compared to districts without this resource.***

DATA & METHODS

The dataset for this analysis contains health and education information on low-income Medicaid-enrolled, school-aged children in Tennessee public schools from 2006-2019. These data were assembled through a research-practice partnership between Vanderbilt University's Peabody College, the Vanderbilt University Medical Center (VUMC), the Tennessee Education Research Alliance, the Tennessee Departments of Education and Health, and Tennessee's Medicaid Agency (TennCare).

The student-level education data include student demographic characteristics, school disciplinary incidents, daily school attendance, schools enrolled, grade level, and test scores. The health data include diagnoses of chronic, acute, and mental health conditions and outpatient, inpatient, and emergency department services utilization for these same students.

In addition, the research team conducted approximately 60 interviews across Tennessee with directors of Coordinated School Health, social workers, school nurses and counselors, and other school-based staff to better understand the resources they are developing and constraints they face when identifying and addressing students' mental health needs via school-based or linked health services.

The research team developed a list of Tennessee school districts with SBHCs using surveys and a mapping tool from the School-Based Health Alliance (SBHA), a 2019 Tennessee Department of Education (TDOE) survey of school districts, and TDOE's most recent lists of SBHCs in Tennessee. The research team then reached out to every Tennessee school district to confirm the information and documented the SBHC status for 140 (95%) of the school districts. They used publicly available information on federal AWARE grants to document the presence of AWARE-funded resources in counties during our study period.

To examine the relationship between student demographics and mental health diagnoses, the research team used statistical a technique called a regression analysis. In analyzing the effects of SBHCs, the research team used an additional method known as a differences-in-differences approach. This method allowed them to examine the adoption of SBHCs over time across districts in Tennessee to understand student outcomes before an SBHC was introduced and after its implementation. Rates of mental health diagnoses among children in school districts that introduced SBHCs were compared to those of children in school districts that had not yet introduced an SBHC by a specific year. This method allowed the research team to understand how the effects of SBHCs varied based on the timing of their introduction and the duration of their implementation. Because the research team can examine effects for a particular year of adoption as well as average effects across the period of analysis (2006-2019), they were able to assess some district-specific effects as well. Finally, the research team used the interviews to identify overarching themes in SBHC implementation, as well as to identify differences in practices and experiences across school districts that might explain differences in SBHC effects.

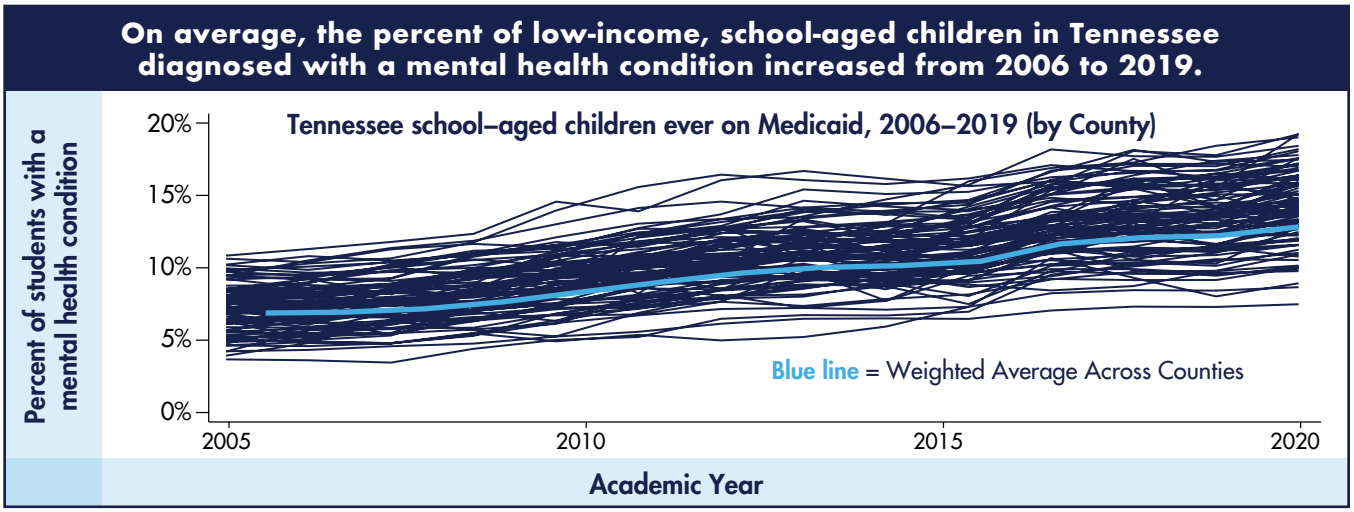
KEY FINDINGS

1 **Rates of diagnosed mental health conditions (ADHD, anxiety, depression, bipolar disorder, self-harm, suicide ideation or attempt) among low-income, Tennessee public school students have been progressively increasing throughout the state.**

We plotted the trends in mental health diagnoses among low-income, school-aged children by county since 2006, where the blue line in the graph below shows the average across counties, weighted by student population. The graph shows that, on average, the percent of low-income, school-aged children in Tennessee diagnosed with any mental health condition increased from an average of about 7 percent in 2006 to about 12 percent in 2019 (before the pandemic).

FIGURE 1

On average, the percent of low-income, school-aged children in Tennessee diagnosed with a mental health condition increased from 2006 to 2019.

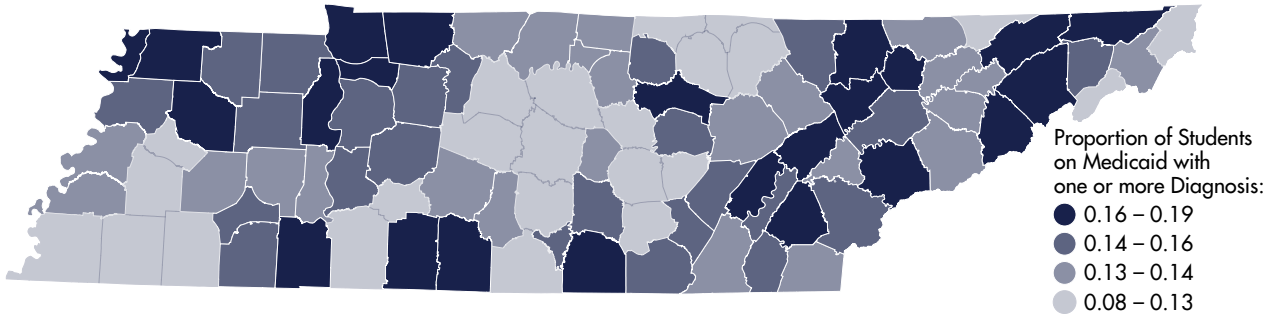


Additionally, to get a better look at where the prevalence rates of these diagnosed mental health conditions were higher among low-income students in Tennessee, we mapped the prevalence of these conditions in 2019 as shown below. The lightest color reflects counties with rates of at least one diagnosis that ranged from 8-13% of students (first quartile), whereas the counties with the darkest shading have the highest rates of students with at least one diagnosis (16-19%).

FIGURE 2

Mental Health Diagnosis Rates for TN Public School Students on Medicaid, 2019

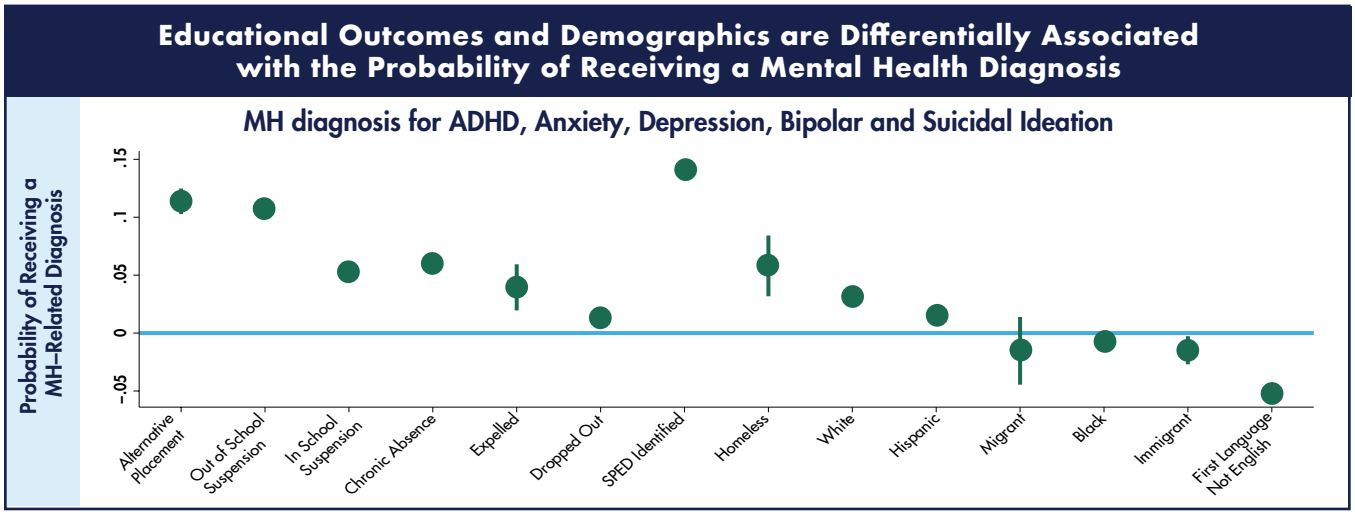
Proportion of students with a diagnosis for one or more: ADHD, Anxiety, Depression, Bipolar and Suicidal Ideation



2 Tennessee students who are chronically absent and more likely to have experienced school disciplinary actions, as well as students with special educational needs and those who are homeless, are more likely to be diagnosed with a mental health condition.

To learn more about the mental health needs in Tennessee, we examined which student groups are more likely to be identified as having a mental health condition. Figure 3 depicts the likelihood that a student in one of these subgroups will be diagnosed with a mental health condition. **The points above the blue zero line reflect student groups that have higher likelihoods of diagnosis, whereas the points below the line reflect student groups that are not as likely to receive a diagnosis.** Specifically, students who identify as Hispanic or White and students who are homeless, chronically absent, identified as having special needs, drop out or are expelled or experience more school disciplinary actions are more likely to be diagnosed with a mental health condition. For example, students who have one or more out of school suspensions are over 10 percentage points more likely to receive a mental health diagnosis in a given school year than those who have never received an out of school suspension, and special education students are 13 percentage points more likely to receive a mental health diagnosis than their peers without the special education identification.

FIGURE 3



Note: The graph shows standard error bars for each predicted probability, with most very precise.

Further, interviews with school district staff suggest that these diagnosis associations are well known among those working daily with our students in schools, and school counselors, social workers, special education staff, and other behavioral health professionals often work together to coordinate supports for these students. Many school districts are providing regular training for school staff, "from bus drivers to district leaders," using established programs such as Youth Mental Health First Aid, to cultivate alternative approaches to serving students' needs that can reduce absences and the use of disciplinary actions.

There are a wide range of innovative, preventative strategies employed across Tennessee schools for supporting student mental health and reducing adverse outcomes. For example, as a strategy to reduce student absences, one school district created "reset spaces" in their schools where students can go when they are encountering difficulties during the school day. The rooms include items to help students reduce stress, like exercise equipment, white boards, and calming materials, as well as telehealth access to trained mental health professionals. The students typically check in and out with counselors when they go to use the space, allowing for brief mental health checks and tracking of student needs. School staff reported that many students come in with anxiety rated at a 9 or 10 level (on a self-rated 1-10 scale) but leave with anxiety at a 3 or 4 level.

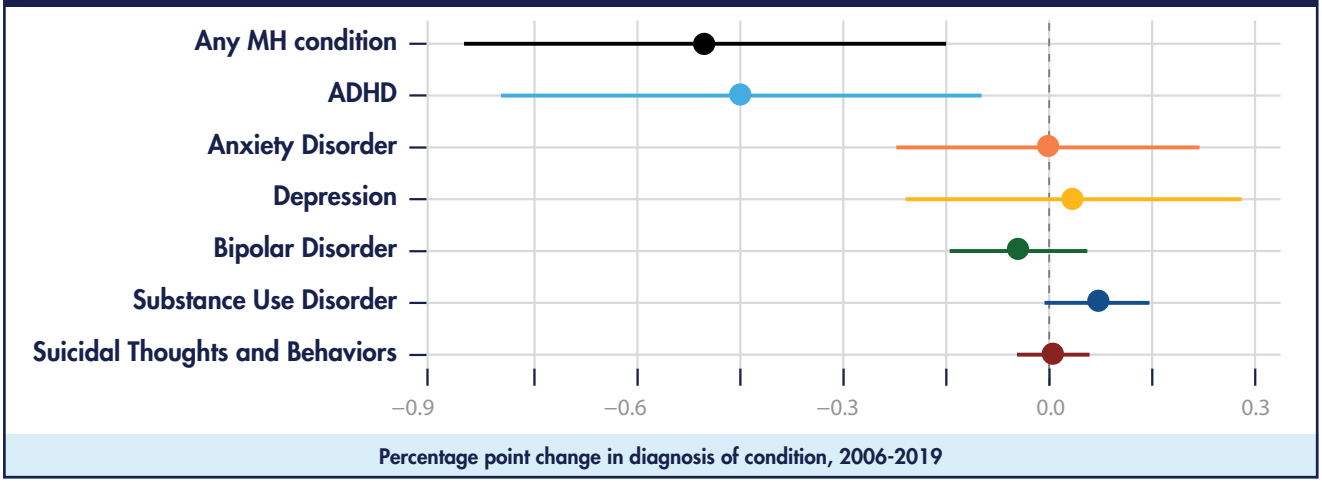
3 On average, Tennessee school districts that introduced school-based health centers saw a 7% reduction in the diagnosis of mental health conditions among low-income students compared to districts without this resource.

To understand the role that SBHCs may play in helping to support student mental health in Tennessee, we examined whether and how SBHCs have affected mental health outcomes for students. Figure 4 shows the average effects of SBHCs on the prevalence of mental health conditions across all school districts from 2006-2019. **The introduction of an SBHC is associated with a 0.5 percentage point decline in the probability of being diagnosed with any mental health condition, which corresponds to a 7.2% relative decrease in the proportion of low-income students diagnosed with any mental health condition.** Averaged across school districts, it also shows that the reductions were largest in diagnoses of attention deficit and hyperactivity disorder (ADHD). Specifically, the introduction of an SBHC was associated with a decline of 0.4 percentage points in the diagnosis of ADHD, which corresponds to a 5.8% relative reduction in the diagnosis of ADHD.

Some school districts experienced additional and larger effects. For example, Memphis-Shelby County School District reduced diagnosed of any mental health conditions by 20% and also substantially reduced specific diagnoses of depression, anxiety and ADHD. Memphis-Shelby County School District currently has two SBHCs and three family wellness centers that are open year-round to students, families, and community members. They also partner with a federally qualified health center to provide referrals and telehealth services for mental/behavioral health, dental, and other specialized care.

FIGURE 4

Tennessee school districts that introduced school-based health centers experienced a reduction of mental health diagnoses among low-income students.



The interviews described how throughout the state, coordinated school health directors (CSHDs) have often taken the lead in identifying resources and cultivating partnerships to establish SBHCs. They have played key roles in fostering collaboration among programs and staff that offer counseling, psychological services, mental and behavioral health supports, and social services to students and their families, including within schools as well as between the school system and other stakeholders. They also identify gaps between student needs and available resources and find ways to meet those needs, often applying for external grants and leveraging the partnerships formed with local organizations and community stakeholders.

CONCLUSION AND IMPLICATIONS

The school setting provides an opportunity to improve the mental health of children, especially those who might otherwise go without care. SBHCs are expanding rapidly in response to children's rising mental health needs, particularly in Tennessee's rural areas. We found that the introduction of SBHCs in Tennessee school districts is associated with an approximate 7 percent reduction in the diagnosis of mental health conditions among low-income students. Our interviews show that SBHCs increase health professional staffing in schools, allowing more students to interact with appropriate professionals and leading to the early identification and treatment of mental health needs. These prevention strategies may preclude conditions from reaching a diagnosable level.

Our findings point to several implications that may help bolster mental health support for students.

POLICY IMPLICATIONS

Schools and School Districts

- Continue expanding programs for early identification of risks, detection and management of student mental health conditions, and implementation of prevention strategies that can preclude conditions from reaching a diagnosable level.

State Leaders

- Include more funding for school districts to address student mental health needs in the state budget to make up the difference when ESSER funds expire, especially providing more funds for hiring or retaining licensed social workers, behavioral health therapists, school nurses, crisis counselors, and other mental health professionals.
- Increase funding for the state's coordinated school health program to keep pace with rising student needs and the higher costs of staffing programs.
- Ensure school districts are aware of federal funding opportunities, such as the School-Based Mental Health Services (SBMH) grant, and assist them in applying for these grants.

In ongoing research, we will analyze how different SBHC funding and partnership structures, staffing and programs, and student populations influence their effectiveness in addressing children's mental health needs and improving their health and education outcomes. With additional years of data, we will also extend our analyses of SBHC impacts to include more recent years when many additional SBHCs were launched in Tennessee. In addition, we will explore how the relationships between child mental health conditions and school absenteeism and disciplinary actions among low-income, school-aged children have changed since 2019, and how school districts adapted their approaches to serving children's mental health needs after pandemic disruptions.

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