schools or community health centers, organizing and optimizing the dental profession's participation in charitable events, and nonmedical emergency transportation.[6] These approaches would have more likely produced an increase in dental care utilization without additional cost to the study or changes within the quitline infrastructure.[6]

This study does emphasize how stakeholders have long attempted to apply existing practices to novel health promotion programs with little to no success. By remaining steadfast and not open-minded to innovative approaches known to improve oral health dental utilization (e.g., free screenings, transportation, and treatment vouchers), the likelihood of a successful outcome in this study was slim to none from the start. These reported results can be attributed to many factors, among which include the lack of strategies found in the literature to help improve dental utilization. Although sustainability is critical to any program, the problem with a bottom-line approach toward sustainability is that stakeholders only include elements that are visible and produce quick financial payoffs. They do not go beyond and search for novel practices and policies that might not readily appear to fit into the current infrastructure but could ultimately ensure positive outcomes while safeguarding sustainability.

This is a critical moment for oral health in the United States, and a time when profound change in the practice environment could bring about unprecedented opportunities. Therefore, the time has come to explore the questions outlined in this study and in this editorial. Can programs such as OH4L chart the course for change in the future and enable quitlines to provide the grass roots, innovative alternative that makes it possible to deliver necessary oral health care education, coupled with active partnerships within the communities, to improve dental care utilization through innovative oral health promotion programs? I believe they can if, and only if, stakeholders will think outside the box and allow collaborative partnerships that put into place proper enabling conditions to attract dental providers to participate in low-cost or free services. These efforts could change the oral health landscape and address the main critical driver why adults report not intending to visit a dentist. I believe that the decline in dental care utilization warrants significant attention and it is important to uncover the critical implications for decreased dental care utilization. The time is now to act to expand access to dental care for adults and open up the avenues that have been found to be effective in increasing dental utilization. AJPH

Marcia M. Ditmyer, PhD, MBA, MS

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Embracing the School Start Later Movement: Adolescent Sleep Deprivation as a Public Health and Social Justice Problem

Follow-up on: Paksarian D, Rudolph KE, He JP, and Merikangas KR. School start time and adolescent sleep patterns: results from the US National Comorbidity Survey—Adolescent Supplement. Am J Public Health. *2015;105(7):1351–1357.*

Sleep deficiency is a prominent public health problem—especially among adolescents. In a report based on a nationally representative sample published in *AJPH* in 2015, Paksarian et al.[1] found that only 23% of female and 29% of male adolescents obtained at least eight and a half hours of sleep. Current consensus statements recommend that all adolescents receive between eight and 10 hours of sleep per night[2] for optimal health, performance, and safety of the population.

The causes of insufficient sleep among adolescents are multifactorial and include behavioral (e.g., technology and social media use) and biological factors. Around the time of puberty, for example, sleep patterns are delayed, causing adolescents to have a biological drive to stay up later and sleep in later. Beyond these behavioral and biological contributors, one policy-level factor directly contributes to the epidemic of insufficient sleep among adolescents: early school start times.

We provide a brief history and summary of key scientific findings related to school start times. In addition, we contend that the conflict between school start times and adolescent sleep is not only a critical public health issue but also a matter of social justice.

ABOUT THE AUTHORS

Lauren Hale is with the Program in Public Health, Department of Family, Population, and Preventive Medicine, Stony Brook University School of Medicine, Stony Brook, NY. Wendy Troxel is with RAND Corporation, Pittsburgh, PA.

Correspondence should be sent to Lauren Hale, PhD, HSC Level 3, Room 071, Program in Public Health, Stony Brook, NY 11794-8338 (e-mail: lauren.hale@stonybrook.edu). Reprints can be ordered at http://www.ajph.org by clicking the "Reprints" link.

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HISTORY AND EVIDENCE

The movement toward healthy school start times began in the early 1990s with seminal research from Carskadon et al.,[3] who found that adolescents have a biological predisposition to stay awake later and sleep in later. Following this early work, two school districts in Minnesota delayed their school start times by more than an hour to 8:30 AM or later. Data from more than 18 000 students indicated that adolescents in these districts received nearly one hour of additional sleep per night after the shift in school schedule.[4]

Over the past three decades, the evidence supporting delaying school start times has grown considerably and remains consistent and strong. Numerous studies have shown that later school start times are associated with more sleep for adolescents. Additional benefits of later start times include better academic outcomes (including increased attendance and graduation rates), better emotional health outcomes, and a reduction in motor vehicle crash rates.[5] Moreover, recent evidence suggests that delaying school start times could result in substantial benefits for the US economy.[6]

Based on the scientific evidence, in 2014, the American Academy of Pediatrics recommended that all secondary schools start at 8:30 AM or later. Similar recommendations have since been issued by many organizations, including the American Academy of Sleep Medicine, the Society of Behavioral Medicine, the American Medical Association, and the Centers for Disease Control and Prevention. This is a rare example of major medical organizations making public statements about education policy. The consensus around this issue reflects the consistency of the scientific research supporting later school start times for the public health benefit. Despite the scientific support for delayed school start times, the average school start time for middle and high schools in the United States is 8:03 AM, with fewer than 18% of schools starting at or after 8:30 AM, according to data from the Centers for Disease Control and Prevention.

SCHOOL START TIMES AND SOCIAL JUSTICE

Healthy school start times are not only a critical public health issue but also an important social justice issue. Social justice embraces two goals: (1) health improvement for the population and (2) fair treatment of the disadvantaged. A social justice view of public health also recognizes that health is a public good and contends that the government should participate in the creation of policies that address root causes of ill health.

Healthy school start times address the first social justice goal of health improvement for the entire population, as shown by the clear and consistent evidence presented earlier. Moreover, it is an effective and scalable strategy. Rather than treating sleep deprivation as an individual problematic behavior, systemic delays in school start times address the root causes of poor sleep health for the current and future adolescent populations.

Healthy school start times also address the second social justice goal regarding fair treatment of the disadvantaged. Given strong evidence of racial/ethnic and socioeconomic disparities in adolescent sleep, early school start times may be particularly disadvantageous for vulnerable youths. A study from North Carolina found that later middle school start times were associated with a two percentile point gain in math test scores, with bigger gains among those at the lower end of the socioeconomic spectrum.[7] Furthermore, delayed school start times are associated with increases in attendance and better graduation rates.[5] Thus, later start times may be an important and cost-effective strategy to minimize the achievement gap and improve outcomes for socioeconomically disadvantaged students.

SCHOOL START TIMES: A PUBLIC HEALTH PRIORITY

Over the past 30 years, a strong and relatively consistent body of research has emerged confirming the far-reaching benefits of later school start times for adolescents' mental health, academic performance, and public safety. Furthermore, we contend that the conflict between early school start times and adolescent sleep represents an issue of social justice, potentially contributing to troubling racial/ethnic and socioeconomic disparities in sleep health and associated downstream consequences.

As with other public health crises, such as the obesity epidemic, no single "magic bullet" intervention will have a demonstrable effect on curbing the epidemic of adolescent sleep deprivation. Rather, multipronged strategies are necessary. At the individual and family levels, educational efforts can promote sleep hygiene, including regular early bedtimes and limited screen time in the hours before bed. At the policy level, delaying school start times is a key intervention with proven results.

School districts face many logistical challenges when implementing healthy school start times, such as changes in busing schedules, effects on sports, and shifts in after-school jobs. However, numerous districts have successfully addressed these logistical obstacles. If we frame school start times as a matter of public health and social justice, then we have an obligation to overcome these impediments and do what is best for the children. AJPH

Lauren Hale, PhD
Wendy Troxel, PhD

CONTRIBUTORS

Both authors contributed equally to this editorial.

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