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Editorial

Understanding Socioeconomic Status and Adolescent Behavioral health—Time to Move Beyond Simplistic Measures and Cross-sectional Data

Income inequality has steadily increased over the past several decades [1]. Along with the growing wealth gap, we have also seen rising alcohol and drug use disorders, worsening mental health symptoms, and increasing deaths due to drug overdose and suicide [1–4]. Adolescents have not been spared from this mental health crisis; suicide is now the second leading cause of death among adolescents in the U.S., and deaths due to drug overdose are also increasing [5,6]. These alarming trends have only escalated further with the COVID-19 pandemic [7]. Adolescents and their families continue to face unprecedented challenges because of social isolation, financial strain, and increased stress and anxiety. Families that were at the margins of the income gradient before the pandemic have suffered disproportionately.

It is perhaps never been more critical to understand the association between socioeconomic status (SES) and behavioral health as we grapple with the fallout from the pandemic. However, despite decades of research regarding SES and health, much remains unknown regarding its association with behavioral health outcomes, including adolescent substance use. Although adolescent tobacco use is consistently associated with lower SES, findings regarding cannabis use or other illicit drug use are mixed, and in most cases, alcohol use appears more prevalent among those with higher income [8–11]. It is hard to know whether inconsistencies result from variations in SES measures (e.g., income, educational attainment, neighborhood poverty, cross-sectional or longitudinal measures) [12]. The one-dimensional measures of SES typically used in prior studies may poorly characterize these associations.

Newer data-driven approaches are needed to expand our understanding of the relationship between SES and substance use and are beginning to offer new insight [11]. Lowthian et al. [13] take an important step in this direction with their use of latent class analysis and multidimensional measures of SES to shed new light on this complex relationship. In their exploration of the multifaceted experience of SES, they jointly assess commonly used SES factors such as income and education, with additional less commonly used measures of family affluence and school-level deprivation. Results identified heterogeneity in the effects of SES on mental health outcomes, whereby adolescents whose families are at the margins, or who are "chronically poor," as well as the "affluent" families in deprived schools experience higher levels of substance use and poorer mental well-being. These results suggest that we cannot focus on a single aspect of SES (e.g., income) because even those adolescents who are relatively higher in affluence but who attend schools where deprivation is more concentrated are at risk. We must consider the combined effects of these characteristics on behaviors.

Still, the study had limitations. Although the analysis used a large sample of secondary school children, the sample was overwhelmingly white (91%) and was unable to assess patterning of substance use and mental health outcomes by race. Racial and ethnic minority status is tightly linked to both SES and health outcomes [14]. Despite small numbers, students in this sample who identified as racial/ethnic minorities were significantly more likely to be in the classes reflecting school-level deprivation, lower family affluence, and lower overall income ("nonworking"). This is not surprising given that systemic racism and segregation has led to greater concentration of racial/ethnic minority families in lower-resourced neighborhoods. Hopefully, future research could extend the findings of Lowthian et al. by including a more diverse student population that would enable examining the intersection of race/ethnicity with SES in contributing to risk for behavioral health outcomes.

However, our understanding of the relationship between SES and mental health and substance use should move beyond reliance on survey-based assessments in school settings. This is likely to undervalue the relationship between SES and mental well-being or substance use, given that these surveys miss a particularly vulnerable population of adolescents and families—those who have dropped out of school and those experiencing homelessness. National school-based surveys cannot capture the families that are truly at the margins because the very instability of their lived experiences means that they may be unable to participate in data collection due to school absences. Thus, although the results of this work are compelling, it may only scratch the surface

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because the population at greatest risk for SES deprivation and poor mental health or substance-related outcomes may not be represented.

As we move beyond the use of singular measures of SES, we should also move beyond single point-in-time assessments of mental health and well-being, substance use, and household financial stability, given their constant fluctuations. Prior studies have demonstrated the feasibility of ecological momentary assessment data collection among adolescents enrolled in schools, young adults in substance use treatment, and youth experiencing homelessness [15–17]. The advantage ecological momentary assessment offers is that it can randomly sample health behaviors through prompted surveys to detect fluctuations in substance use patterns as well as their predictors [18]. As adolescents are difficult to engage in substance use treatment services, identifying ways to deliver prevention and treatment in an accessible and user-friendly way through smartphones could increase delivery at scale. As the digital divide in access to smartphones rapidly declines, research is needed to catch up and harness these opportunities for public health prevention.

Lowthian et al. demonstrate the use of creative metrics and new analytic approaches for uncovering heterogeneity in a poorly understood area of research. A more complete understanding of the relationship between SES, mental health, and substance use among adolescents will be needed as the world begins to take stock of the immense effects of a pandemic on behavioral health. Adolescence is a critical period in growth and development when symptoms of depression, anxiety, and substance use often emerge for the first time. Early age of substance use initiation is associated with lifelong consequences including risk for substance use disorder in adolescence and adulthood [19]. This research will hopefully inspire further work to understand opportunities for untangling the relationship between SES and mental health and substance use to importantly target prevention efforts.

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