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Family Economics and Mental Health Among
High-School Students During COVID-19

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Introduction: The COVID-19 pandemic has had unprecedented socioeconomic and health impacts in the U.S. This study examined racial/ethnic and school poverty status differences in the relationship between parent job loss, experiences with hunger, and indicators of mental health problems among public high-school students nationwide during the COVID-19 pandemic.

Methods: The study analyzed data from the Adolescent Behaviors and Experiences Survey, conducted in January–June 2021. The Adolescent Behaviors and Experiences Survey was a 1-time, cross-sectional, online survey that used a stratified, 3-stage cluster sample to obtain a nationally representative sample of high-school students in the U.S. This study was limited to public-school students ($n=7,379$).

Results: Among public high-school students nationwide, 36.9% experienced poor mental health during the pandemic, and during the past year, 43.9% experienced persistent feelings of sadness or hopelessness, 19.8% seriously considered attempting suicide, and 9.1% attempted suicide. Parent job loss and having gone hungry were associated with indicators of mental health problems overall and across racial/ethnic groups and school poverty status levels.

Conclusions: Students who experience parent job loss and hunger are likely to also experience poor mental health and may be at higher risk for suicide.

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INTRODUCTION

The coronavirus disease (COVID-19) pandemic has had unprecedented socioeconomic and health impacts in the U.S.¹ By April 2022, COVID-19 had claimed >985,000 lives, and many more had been hospitalized.² The pandemic also has had profound mental health impacts among youth,^{3,4} with many adolescents having experienced high or very high stress (41%),⁵ poor mental health (37%),⁴ persistent symptoms of depression (16%),⁵ and persistent feelings of sadness or hopelessness (44%).⁴ However, mental health among youth was already an important public health problem before the pandemic.^{6,7} In 2019, 37% of high-school students nationwide experienced persistent feelings of sadness or hopelessness,⁶ 24% seriously considered attempting suicide, and 11% attempted suicide during the year before the survey.⁷

Poor mental health during the pandemic may be explained, in part, by the impacts of the pandemic on

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conditions in families' environments—or social determinants of health.⁸ Social determinants of health, such as economic stability, educational access, and social and community support, are known to affect health and quality of life.⁸ Widespread job loss during the pandemic caused many families to struggle with economic stability,⁹ with low-paying industries accounting for 30% of all jobs but 59% of the jobs lost from February 2020 to October 2021.⁹ During COVID-19, economic insecurity was associated with family discord and stress,¹⁰ and parental job loss was associated with an increase in child psychological abuse.¹¹

Pandemic-related job loss also contributed to millions of American households experiencing food insecurity^{9,12}; that is, a lack of “access at all times to enough food for an active, healthy life.”¹² In 2019–2020, an estimated 11% of children aged 0–17 years lived in households that experienced food insecurity, with more Black (19%) and Hispanic (16%) children being food insecure than White children (7%).¹³ Prepandemic research documents a relationship between children's food insecurity and an increased likelihood of behavioral problems, depression, and suicide ideation.^{14–17}

Although a social determinants of health lens can help explain a link between economic insecurity and poor mental health,⁸ it is unclear whether living through the pandemic altered or exacerbated that relationship. This study is meant to inform policies and practices that address mental health supports developed during recovery planning to ensure the long-term well-being of youth and families. To that end, this study examined the relationship between parent job loss, experiencing hunger, and indicators of mental health problems during the COVID-19 pandemic among public high-school students nationwide, by race and ethnicity and school poverty status.

METHODS

Study Sample

This report is a secondary analysis of data from the Adolescent Behaviors and Experiences Survey (ABES),¹⁸ conducted by the Centers for Disease Control and Prevention (CDC) between January and June 2021 to assess student behaviors and experiences during the COVID-19 pandemic. ABES was a 1-time, online survey that used a stratified, 3-stage cluster sample to obtain a nationally representative sample of public- and private-school students in grades 9–12 in the U.S. Data were collected both during and outside of instructional time. The number of students in the sample was 7,705, the school response rate was 38%, the student response rate was 48%, and the overall response rate ([student response rate] × [school response rate]) was 18%. The ABES study protocol was approved by IRBs at CDC and ICF International Inc., CDC's survey contractor. Additional information

about ABES sampling, data collection, response rates, and processing is available in an ABES overview report.¹⁸

Measures

This analysis included 2 social determinants of health measures as exposure variables: (1) a parent or other adult in the home lost their job during the pandemic (referred to as parent job loss in the remainder of this paper) and (2) 1 element of food insecurity, that is, the student went hungry (i.e., sometimes, most of the time, or always) during the pandemic because there was not enough food in their home (referred to as went hungry in the remainder of this paper). The analysis also included the following 4 mental health and suicidality measures as outcome variables, which are used in or modeled after the national Youth Risk Behavior Survey questionnaire⁶ (collectively, indicators of mental health problems): (1) experienced poor mental health during the pandemic (time frame not further specified) and during the 12 months before the survey, (2) experienced persistent feelings of sadness or hopelessness, (3) seriously considered attempting suicide, and (4) attempted suicide. [Table 1](#) provides question wording, response options, and analytic coding.

The questionnaire included questions about students' sex (female or male), grade in school (9, 10, 11, or 12), and race/ethnicity. Students were asked their race and ethnicity using 2 questions: *Are you Hispanic or Latino? (yes/no)* and *What is your race? (Select one or more responses.)*. Responses were categorized as Hispanic or Latino of any race (Hispanic) and the following non-Hispanic racial groups: American Indian or Alaska Native (AI/AN), Asian, Black or African American (Black), Native Hawaiian or other Pacific Islander (NH/OPI), White, and multiracial. The numbers of students who were AI/AN, NH/OPI, and multiracial were too small for meaningful subgroup analysis; therefore, those data are not presented but remain in the full analytic sample.

ABES data were linked with data from MDR (formerly Market Data Retrieval, <https://mdreducation.com>), a commercial database containing information about individual U.S. schools. That database was used to determine, at the school level, the prepandemic percentage of public-school students eligible for free or reduced-price meals (FRPMs). Schools in which >75% of the students were eligible for FRPMs were considered high-poverty schools, those in which 26%–75% of the students were eligible were considered mid-poverty schools, and those in which 25% or less were eligible were considered low-poverty schools.¹⁹ FRPM information is available only for public schools; therefore, this analysis was limited to students attending public schools ($n=7,379$; 94% of the original sample).

Statistical Analysis

A weight based on students' sex, race/ethnicity, and grade in school was applied to each record to adjust for school and student nonresponse and oversampling of Black and Hispanic/Latino students. Additional details about the weighting procedures have been previously published.²⁰ Missing data were not imputed. To account for the complex sample design and weighting, all analyses were conducted using SUDAAN statistical software (Version 11.0.3) (Research Triangle Institute, Research Triangle Park, NC). A *t* test for proportions test was used to determine statistically significant differences in the 4 indicators of mental health problems

Table 1. Question Wording and Analytic Coding for Included Study Variables

Variable names	Questions	Response options	Response of interest	Response of interest prevalence % (95% CI)
Experienced poor mental health during the pandemic	During the COVID-19 pandemic, how often was your mental health not good? (poor mental health includes stress, anxiety, and depression.)	Always, most of the time, sometimes, rarely, or never	Always or most of the time	36.9 (34.7, 39.1)
Experienced persistent feelings of sadness or hopelessness	During the past 12 months, did you ever feel so sad or hopeless almost every day for 2 weeks or more in a row that you stopped doing some usual activities?	Yes or no	Yes	43.9 (41.6, 46.3)
Seriously considered attempting suicide	During the past 12 months, did you ever seriously consider attempting suicide?	Yes or no	Yes	19.8 (17.9, 22.0)
Attempted suicide	During the past 12 months, how many times did you actually attempt suicide?	0 times, 1 time, 2 or 3 times, 4 or 5 times, or 6 or more times	≥1 time	9.1 (7.7, 10.7)
Parent job loss	During the COVID-19 pandemic, did a parent or other adult in your home lose their job even for a short amount of time?	Yes, no, or my parents and other adults in my home did not have jobs before the COVID-19 pandemic started	Yes	28.6 (26.3, 31.1)
Went hungry during the pandemic	During the COVID-19 pandemic, how often did you go hungry because there was not enough food in your home?	Always, most of the time, sometimes, rarely, or never	Always, most of the time, sometimes	8.4 (7.2, 9.9)

overall and within racial/ethnic and school poverty categories. Differences were considered statistically significant if $p < 0.05$.

RESULTS

The analytic sample comprised 49.0% female students, 49.9% White, 26.2% Hispanic, 12.7% Black, 4.5% Asian, 1.3% NH/OPI or AI/AN, and 5.5% multiracial students. Students were in Grades 9 (26.8%), 10 (25.5%), 11 (24.3%), and 12 (23.5%). Most students attended mid-poverty schools (56.2%), and the remaining attended low-poverty (23.2%) and high-poverty (20.7%) schools.

Overall, an estimated 36.9% of public-school students nationwide experienced poor mental health during the pandemic, and during the 12 months before the survey, 43.9% experienced persistent feelings of sadness or hopelessness, 19.8% seriously considered attempting suicide, and 9.1% attempted suicide (Table 1). During the pandemic, 28.6% of students experienced parental job

loss, and 8.4% went hungry, both of which were associated with indicators of mental health problems (Table 2). The prevalence of poor mental health during the pandemic was significantly higher among those who experienced parent job loss than among those who did not (45.2% vs 33.9%), as was persistent feelings of sadness or hopelessness (53.0% vs 40.6%), having seriously considered attempting suicide (24.8% vs 18.3%), and attempted suicide (12.8% vs 7.4%). Similarly, the prevalence of poor mental health during the pandemic was significantly higher among those who went hungry than among those who did not (52.8% vs 35.4%), as was persistent feelings of sadness or hopelessness (69.9% vs 41.7%), having seriously considered attempting suicide (37.0% vs 18.4%), and attempted suicide (24.7% vs 7.6%).

The association between parent job loss and indicators of mental health problems was inconsistent across racial/ethnic groups and school-level poverty (Table 3). For example, among White students, the prevalence of

Table 2. Indicators of Mental Health Problems, by Parent Job Loss and Having Gone Hungry

Variables	Poor mental health during the pandemic ^a % (95% CI)	Persistent feelings of sadness or hopelessness ^{b,c} % (95% CI)	Seriously considered attempting suicide ^c % (95% CI)	Attempted suicide ^c % (95% CI)
Parent job loss ^d				
Yes	45.2 (42.0, 48.4)^e	53.0 (49.0, 57.0)^e	24.8 (21.5, 28.3)^e	12.8 (9.6, 16.8)^e
No	33.9 (31.6, 36.4)	40.6 (38.4, 42.8)	18.3 (16.4, 20.4)	7.4 (6.2, 8.7)
Went hungry during the pandemic ^f				
Always/most/sometimes	52.8 (46.3, 59.2)^g	69.9 (65.1, 74.3)^g	37.0 (31.4, 43.1)^g	24.7 (19.4, 30.9)^g
Never/rarely	35.4 (33.2, 37.6)	41.7 (39.4, 44.0)	18.4 (16.6, 20.4)	7.6 (6.4, 9.0)

Note: Boldface indicates significant differences ($p < 0.5$).

^aDuring the COVID-19 pandemic, always or most of the time the student's mental health was not good (poor mental health included stress, anxiety, and depression).

^bEver feel so sad or hopeless almost every day for 2 weeks or more in a row that they stopped doing some usual activities.

^cDuring the 12 months before the survey.

^dDuring the COVID-19 pandemic, a parent or other adults in their home lost their job even for a short amount of time.

^eSignificantly different from no respondents on the basis of t test for proportions test.

^fDuring the COVID-19 pandemic, always, most of the time, or sometimes went hungry because there was not enough food in their home.

^gSignificantly different from never/rarely respondents on the basis of t test for proportions test.

the 4 indicators of mental health problems was significantly higher among students who experienced parent job loss than among students who did not. Similarly, among Hispanic students, all indicators of mental health problems, except attempted suicide, were associated with parent job loss. In contrast, among Black students, only poor mental health during the pandemic was associated with parent job loss; among Asian students, only persistent feelings of sadness or hopelessness were associated with parent job loss.

Among students attending low-poverty and mid-poverty schools, the prevalence of the 4 indicators of mental health problems was significantly higher among students who experienced parent job loss than among students who did not. In contrast, among students attending high-poverty schools, only persistent feelings of sadness or hopelessness were associated with parent job loss.

The findings suggest some differences in the association between having gone hungry during the pandemic and indicators of mental health problems across racial/ethnic groups and school-level poverty (Table 4). For example, among White and Hispanic students, the prevalence of the 4 indicators of mental health problems was significantly higher among students who went hungry than among students who did not. Among Black students, the prevalence of these indicators of mental health problems, with the exception of attempted suicide, was significantly higher among students who went hungry than among students who did not. In contrast, among Asian students, none of the associations was significant.

Among students attending mid-poverty schools, the prevalence of all 4 of the indicators of mental health

problems was significantly higher among students who went hungry than among students who did not. Among students attending low- and high-poverty schools, the prevalence of these indicators of mental health problems was also significantly higher among students who went hungry than among those who did not, with the exception of poor mental health in low-poverty schools and attempted suicide in high-poverty schools.

DISCUSSION

This study found that the prevalence of mental health problems among high-school students remained high during the pandemic: 36.9% experienced poor mental health during the pandemic, 43.9% experienced persistent feelings of sadness or hopelessness, 19.8% had seriously considered attempting suicide, and 9.1% had attempted suicide. Moreover, the findings are consistent with a social determinants of health lens, in which people living with economic instability are at higher risk for poorer health and quality of life.¹⁰ In this study, overall, indicators of mental health problems were more prevalent among students who experienced parent job loss and who always, most of the time, or sometimes went hungry during the pandemic than among those who had not had those experiences.

In general, parent job loss and having gone hungry were associated with mental health problems among students across racial/ethnic groups and school poverty status levels. One notable exception is the finding that among Asian students, parent job loss was associated

Table 3. Indicators of Mental Health Problems, by Race/Ethnicity, School-Level Poverty, and Parent Job Loss

Variables	Poor mental health during the pandemic ^a % (95% CI)	Persistent feelings of sadness or hopelessness ^{b,c} % (95% CI)	Seriously considered attempting suicide ^c % (95% CI)	Attempted suicide ^d % (95% CI)
Race/ethnicity ^d				
White ^e				
Parent job loss	47.9 (44.7, 51.1)	54.3 (49.7, 58.9)	28.7 (23.6, 34.4)	15.7 (11.3, 21.5)
No parent job loss	37.0 (33.9, 40.2)	39.6 (36.4, 42.9)	18.8 (16.4, 21.5)	6.3 (4.8, 8.2)
Black ^e				
Parent job loss	38.8 (30.0, 48.5)	47.3 (35.5, 59.5)	18.1 (11.5, 27.4)	14.4 (9.4, 21.6)
No parent job loss	25.3 (20.8, 30.4)	39.2 (34.9, 43.7)	16.2 (12.2, 21.1)	9.1 (6.3, 12.9)
Hispanic				
Parent job loss	44.1 (37.8, 50.5)	52.3 (47.4, 57.2)	22.6 (19.0, 26.7)	9.0 (6.0, 13.3)
No parent job loss	32.8 (29.4, 36.3)	42.5 (37.7, 47.4)	17.7 (15.0, 20.7)	8.1 (5.8, 11.3)
Asian ^e				
Parent job loss	42.4 (28.6, 57.5)	48.2 (37.5, 59.1)	17.8 (10.8, 27.8)	9.1 (4.8, 16.6)
No parent job loss	30.2 (25.0, 36.0)	32.9 (26.6, 39.8)	13.4 (9.3, 19.0)	6.8 (3.0, 14.4)
School-level poverty status ^f				
Low-poverty				
Parent job loss	50.3 (44.9, 55.7)	53.6 (47.6, 59.6)	29.4 (23.4, 36.2)	17.2 (8.7, 31.0)
No parent job loss	35.8 (31.3, 40.5)	40.6 (36.4, 45.1)	18.2 (14.7, 22.3)	5.9 (4.5, 7.6)
Mid-poverty				
Parent job loss	45.8 (42.5, 49.2)	52.8 (48.0, 57.6)	23.9 (20.4, 27.9)	12.1 (9.0, 16.2)
No parent job loss	33.1 (30.0, 36.3)	39.7 (36.6, 42.9)	18.3 (15.4, 21.5)	7.3 (5.7, 9.3)
High-poverty				
Parent job loss	41.0 (31.7, 51.0)	54.7 (47.8, 61.4)	24.6 (17.1, 33.9)	11.6 (6.3, 20.4)
No parent job loss	33.5 (29.1, 38.2)	42.7 (37.5, 48.0)	17.8 (14.2, 22.3)	10.0 (6.8, 14.5)

Note: Boldface indicates significant differences ($p < 0.5$).

Parent job loss means that during the COVID-19 pandemic, a parent or other adults in their home lost their job even for a short amount of time. FRPM, free or reduced-price meal.

^aDuring the COVID-19 pandemic, always or most of the time the student's mental health was not good (poor mental health included stress, anxiety, and depression).

^bEver feel so sad or hopeless almost every day for 2 weeks or more in a row that they stopped doing some usual activities.

^cDuring the 12 months before the survey.

^dThe numbers of students in the American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, and multiple races groups were too small for stable estimates and analysis of association.

^eNon-Hispanic/Latino.

^fLow-poverty schools denote that $\leq 25\%$ of students were eligible for FRPM, mid-poverty schools denote that $26\% - 75\%$ of students were eligible for FRPM, and high-poverty schools denote that $> 75\%$ of students were eligible for FRPM.

only with persistent feelings of sadness or hopelessness, and having gone hungry was not associated with any of the indicators of poor mental health. The null findings may be a function of limited statistical power because of small sample sizes; however, further research is needed to understand the relationship between family economic indicators and mental health among Asian youth and whether more statistical power would unveil different conclusions. Another notable exception to the overall findings is the lack of association between parent job loss and 3 of the 4 indicators of mental health problems measures among students attending high-poverty schools; only persistent feelings of sadness or hopelessness were associated with parent job loss in this group. Although statistical power may also help to explain the

more limited associations with mental health for this group, these effects could also reflect the unique experiences of this population with economic insecurity before and during the pandemic.

During much of 2020 and 2021, the 2020 Coronavirus Aid, Relief, and Economic Security Act provided supplemental funding to unemployment benefits.²⁰ Unemployment benefits were associated with significant reductions in food insecurity in households earning $< \$75,000$ who lost their jobs during COVID-19.²¹ Additional research could clarify whether this financial assistance mitigated mental health problems among students whose parents lost a job and received these benefits. Given other evidence that pandemic-related job loss was disproportionately experienced in low-

Table 4. Indicators of Mental Health Problems, by Having Gone Hungry, Race/Ethnicity, and School-Level Poverty

Variables	Poor mental health during the pandemic ^a	Persistent feelings of sadness or hopelessness ^{b,c}	Seriously considered attempting suicide ^c	Attempted suicide ^c
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Race/ethnicity ^d				
White ^e				
Went hungry	59.6 (48.8, 69.5)	74.3 (67.2, 80.3)	41.5 (33.1, 50.4)	29.5 (21.7, 38.7)
Did not go hungry	38.1 (35.4, 40.8)	40.9 (37.7, 44.2)	19.7 (17.3, 22.3)	7.4 (5.7, 9.6)
Black ^e				
Went hungry	46.4 (34.1, 59.1)	65.1 (52.2, 76.1)	35.9 (26.8, 46.2)	18.9 (10.3, 32.3)
Did not go hungry	26.3 (21.7, 31.5)	38.8 (34.3, 43.5)	14.5 (10.8, 19.2)	9.7 (6.7, 13.8)
Hispanic				
Went hungry	55.6 (47.8, 63.2)	64.2 (55.8, 71.8)	35.7 (28.4, 43.7)	22.9 (12.1, 38.9)
Did not go hungry	34.7 (31.0, 38.5)	44.0 (39.5, 48.6)	17.5 (14.7, 20.8)	7.0 (5.1, 9.4)
Asian ^e				
Went hungry	42.3 (19.1, 69.6)	63.2 (35.8, 84.1)	9.3 (2.2, 31.8)	12.7 (3.7, 35.6)
Did not go hungry	33.4 (26.6, 40.9)	36.6 (31.9, 41.7)	14.6 (11.5, 18.5)	6.0 (3.7, 9.5)
School-Level poverty status ^f				
Low-poverty				
Went hungry	41.3 (24.0, 61.0)	71.8 (53.8, 84.7)	34.0 (20.6, 50.5)	29.9 (15.9, 49.0)
Did not go hungry	38.2 (34.3, 42.3)	41.0 (36.7, 45.3)	19.1 (16.0, 22.6)	7.2 (5.2, 10.0)
Mid-poverty				
Went hungry	54.5 (46.7, 62.1)	67.9 (62.2, 73.2)	38.1 (31.5, 45.1)	24.5 (18.7, 31.5)
Did not go hungry	35.0 (31.9, 38.2)	41.5 (38.3, 44.8)	18.2 (15.5, 21.2)	7.4 (5.7, 9.5)
High-poverty				
Went hungry	55.3 (41.9, 68.0)	73.6 (62.9, 82.1)	36.3 (22.6, 52.7)	22.3 (11.7, 38.5)
Did not go hungry	33.3 (29.4, 37.3)	43.3 (38.6, 48.2)	18.1 (14.0, 23.0)	9.2 (6.3, 13.3)

Note: Boldface indicates statistical significance ($p < 0.05$).

Having gone hungry during the COVID-19 pandemic, always, most of the time, or sometimes went hungry because there was not enough food in their home. The significant difference is compared with having not gone hungry on the basis of t test for proportions test.

FRPM, free or reduced-price meal.

^aDuring the COVID-19 pandemic, always or most of the time the student's mental health was not good (poor mental health included stress, anxiety, and depression).

^bEver feel so sad or hopeless almost every day for 2 weeks or more in a row that they stopped doing some usual activities.

^cDuring the 12 months before the survey.

^dThe numbers of students in the American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, and multiple-race groups were too small for stable estimates and analysis of association.

^eNon-Hispanic/Latino.

^fLow-poverty schools denote that $\leq 25\%$ of students were eligible for FRPM, mid-poverty schools denote that 26%–75% of students were eligible for FRPM, and high-poverty schools denote that $> 75\%$ of students were eligible for FRPM.

paying industries,⁹ families with students in high-poverty schools may have been more likely to receive this financial support and to see a greater portion of their family income replaced during unemployment. That might explain, in part, the finding that students in these schools reported fewer mental health problem outcomes associated with parental job loss than those in middle- and low-poverty schools. Notably, voluntary job loss because of illness, caregiving responsibilities, or loss of child care is not covered by unemployment insurance and may have also resulted in substantial income loss during the pandemic across all family income levels, particularly among women.²²

Another potential explanation for the more limited associations between job loss and mental health in high-poverty schools could be that pre-existing family economic challenges and income inequality as well as widespread job loss, particularly in low-income job sectors,⁹ rather than pandemic-related job loss itself was the driver of negative mental health outcomes for youth.^{23,24} In this study, pandemic-related job loss may not have affected mental health the way it did among students in low- and mid-poverty schools because job loss could have been part of a larger set of social norms for job loss seen in low-income youth. Brand noted in a review of the impact of job loss and unemployment that

when unemployment is widespread, a social norm effect might take place.²⁵ In that case, losing a job is less stigmatizing because it is less of a deviation from the social norm when so many others have had the same experience.²⁵

Additional mental health resources may be needed to help individuals and families recover from the traumatic impact of the pandemic. In the school environment, social workers and other mental health professionals can help to link families with both social services and mental health services.²⁶ Universal mental health promotion strategies, such as social-emotional learning, have evidence of improving student coping skills.²⁷ Finding ways to help students develop relationships with others at school might help to mitigate the impacts on mental health occurring before and during the pandemic.⁴ Targeted intervention strategies, such as cognitive behavioral therapy, can also improve symptoms of depression, particularly if implemented with children aged <13 years.²⁸ Although schools can play an important role in promoting mental health, CDC estimates that only 1 in 5 young people who need specialized mental health care receive such services.²⁹ The high costs of care, lack of available providers, lack of insurance, and travel constraints are common reasons why so many youth lack the mental health care they need.²⁹ Addressing these barriers to care, through school-based access, telemedicine, and integration of primary care and mental health care, especially among economically disenfranchised youth, is a strategy that may improve mental health care access.²⁹

Identifying the best role for schools in preventing and minimizing household food insecurity requires more study; however, efforts that provide access to food through schools and other outlets in communities may alleviate these burdens for those in need. For example, during the pandemic, the U.S. Department of Agriculture authorized waivers that allowed school nutrition programs to offer meals to children using different distribution methods, including drive-through pick up at locations in the community and delivering on school bus routes as well as providing multiple days' worth of meals at 1 time.³⁰ Additional work is needed to determine how to ensure that these types of programs are delivered equitably such that all students who need access to the program can do so.³¹ U.S. Department of Agriculture also created the Pandemic Electronic Benefit Transfer program to provide students who missed school meals during school closures with grocery benefits. Although Pandemic Electronic Benefit Transfer has been shown to be effective at reducing food insecurity, state agencies developed their own timeline for distributing benefits, leaving some

children without access to benefits during school closures.³²

Limitations

This study is subject to some limitations. First, because of the cross-sectional nature of this survey, causality and temporality of the association between parent job loss, having gone hungry, and indicators of mental health problems cannot be determined, and other factors may better explain or confound the relationship between job loss, going hungry, and poor mental health. Second, among students whose parent or other adults in the home lost a job during the pandemic, the data do not indicate the length of time their parent or other adults were unemployed, whether that job loss was experienced by the primary income earner in the household, or whether they received extended unemployment benefits that could have reduced their economic insecurity. Third, among students who went hungry during the pandemic, it is not clear the extent to which income limitations were the reason for hunger or the extent to which students received meals from their school. In addition, it was not possible to validate the question on self-reported hunger, which is only one dimension of food insecurity and used as a proxy for food insecurity in this study. Fourth, the mental health and suicidality variables used in this study are important indicators of students' mental well-being; however, the questions were not designed to diagnose clinical depression nor other forms of mental illness. Fifth, because of sample size limitations, this study could not investigate how racial/ethnic differences in indicators of mental health problems may have varied within school poverty status. Finally, because school-level SES was available only for public schools, these findings apply only to high-school youth who attend public schools and, therefore, are not representative of those attending private schools or out-of-school youth.

CONCLUSIONS

Among public high-school students nationwide, this study found that the prevalence of several indicators of mental health problems was high and that experiencing parent job loss and going hungry during the pandemic were associated with a higher prevalence of poor mental health during the pandemic and persistent feelings of sadness or hopelessness as well as having seriously considered or attempted suicide. The data suggest that the need for mental health support is high among students across racial/ethnic and socioeconomic groups. These mental health supports may be a critical component of recovery planning in public health and education

settings to ensure the long-term well-being of youth and families who experienced economic insecurity related to the COVID-19 pandemic.

CREDIT AUTHOR STATEMENT

Sherry Everett Jones led the writing team, all of whom critically evaluated the initial data and conceptualized the study. Jemekia Thornton provided initial data files. Sherry Everett Jones analyzed the data. Sherry Everett Jones, Marci Hertz, Sarah DeGue, Caitlin Merlo, and Kathleen Ethier drafted the initial manuscript at which time Vi Le, Patricia Dittus, Rumour Piepenbrink, Jemekia Thornton, and Aaron Houston critically reviewed and revised the manuscript.

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