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## Disparate Impacts of COVID-19 Disruptions for California College Students

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*This paper documents the experience of California college students in the midst of the pandemic as their academic and home lives were disrupted. The analysis relies on a survey sent to all financial aid applicants statewide. Survey respondents include nearly 100,000 students enrolled in both two-year and four-year postsecondary institutions. Results reveal multiple stressors strained the educational experience and trajectories of many students. These stressors were not evenly distributed. In particular, students from low-income backgrounds were more likely to face increased financial stress, additional home responsibilities, and difficulty accessing the online learning environment, when compared to their higher-income peers.*

Keywords: pandemic, COVID-19, college experience, financial constraints, survey college students

**T**he global pandemic disrupted all facets of life. College students across the nation and in California faced substantial uncertainties about their health and safety, financial stability, living situations, learning environments, and family and social connections – all critical inputs for success in college (California Student Aid Commission, 2020; Goldrick-Rab et al., 2020; Soria et al., 2020). Mandatory shelter-in-place orders had significant economic impacts, with 3.3 million Californians filing for unemployment in the first month of the pandemic alone, creating food and housing insecurity (McGough & Reese, 2020). The transition to online instruction created a new basic need for students: technology and connectivity. Over 25% of college students in the U.S. lacked access to reliable internet and properly functioning devices at home prior to the pandemic (Galanek, Gierdowski, & Brooks, 2018). Moreover, changes in living arrangements, and campus closures more generally, brought about environmental challenges for college students, including difficulty finding a quiet space to work, increased responsibilities related to home and childcare, and a loss of social networks (California Student Aid Commission, 2020; Goldrick-Rab et al., 2020; Soria et al., 2020).

To better understand how the pandemic affected students' lives and educational experiences, researchers at University of California Davis (UC Davis) in partnership with the California Student Aid Commission (CSAC) surveyed the full population of California financial aid applicants – over 1.4 million students – in November 2020. To our knowledge, this survey yielded the largest number of responses of any survey of college students during the pandemic (nearly 100,000) across the broadest spectrum of institutions, including the 116 California community colleges, 23 campuses of the California State University system, 9 campuses of the University of California, and numerous private two-year and four-year colleges in the state. Just six months into the pandemic, results revealed initial and substantial financial and educational impacts – especially for the lowest-income college students – and implicated the need for financial and academic support to ensure students' continued enrollment in college and successful completion of college degrees.

## Prior Literature

Prior to the pandemic, many college students already faced challenges meeting basic needs, including reliable access to food and housing, which is associated with lower academic performance (Dubick, Mathews, & Cady, 2016; Goldrick-Rab et al., 2018; Leung, Farooqui, Wolfson, & Cohen, 2021). In 2018, over one third of California college students reported food insecurity, and one third reported housing insecurity (Student Resource and Expenses Survey California Student Aid Commission, 2019). Results from recent surveys indicate that the pandemic exacerbated existing basic needs and economic insecurity among college students.

National surveys of college students in the early weeks of the COVID-19 pandemic documented immediate impacts for students, with results revealing decreased income for students due to job loss or reduced work hours, food insecurity, and homelessness (Goldrick-Rab et al., 2020; Soria et al., 2020). Surveys also found that many students struggled with access to computers, adequate internet bandwidth in shared households with multiple users, and course materials in a remote learning environment, as well as challenges finding quiet places to study given campus closures (New America/Third Way, 2020; Top Hat, 2020). In addition to the financial struggles and logistical challenges, students reported increased levels of depression, anxiety, mental health issues, difficulty concentrating, and increased concern about academic performance (Son et al., 2020). In California, experiences were similar, with high levels of basic needs insecurity, stress, anxiety, and depression reported among community college students in surveys conducted by the California Community Colleges Chancellor's Office (2020) and the Student Senate for the California Community Colleges (2020).

Early surveys also highlighted the variation of pandemic experiences across student subgroups. A national survey found disparities in basic needs insecurity by race/ethnicity, with Black and Hispanic students reporting higher rates of food and housing insecurity than White students (Goldrick-Rab et al., 2020). Another national survey found that Black, Indigenous, and other people of color had greater financial difficulties related to employment, technology, loss of income, food insecurity, as well as greater likelihood of anxiety and depression (Soria et al., 2020). Moreover, surveys separating the experiences of students from two- and four-year colleges uncovered unique challenges for students in each segment. Students residing on campus at four-year colleges reported needing alternative housing and food plans with campus closures, leading to a greater probability of housing and food insecurity (California Student Aid Commission, 2020; Goldrick-Rab et al., 2020).

## Data and Methods

In fall 2020, we administered a survey to the full population of over 1.4 million financial aid applicants statewide – those who filed the Free Application for Federal Student Aid (FAFSA) or the California Dream Act Application (CADAA) for the 2020-21 academic year.<sup>1</sup> The survey was constructed by a team of researchers from both UC Davis and CSAC in consultation with CSAC Commissioners. Survey questions were informed by findings in earlier studies and national surveys of college students during the pandemic. In addition, CSAC Commissioners sought data to better inform policy developments related to the financial well-being of California's college students. Specifically, we asked participants how COVID-19 impacted multiple aspects of their college experience, including financial circumstances, living situation, online course-taking and engagement

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<sup>1</sup> Our sample excluded applicants over the age of 60, students enrolled in graduate programs (or who already earned a bachelor's degree or higher), and students who are not California residents. The sample includes financial aid California residents who submitted a financial aid application but who enrolled in an out of state institution.

experiences (including access to technology and conducive learning environments), shifting responsibilities, and general wellbeing. The survey instrument included Likert-scale, selected response, and open-ended questions. We administered the electronic survey between November 10, 2020 and December 7, 2020 using the email addresses provided in students' financial aid applications. Follow-up emails were sent to nonrespondents weekly during the survey window. A total of 106,546 students responded, a response rate of 7.68%. Of the total responses, 95,444 students were enrolled in college at the time of the survey.<sup>2</sup>

Given the survey response rate, nonresponse bias was a concern. To investigate the representativeness of respondents, we compared the characteristics of respondents and nonrespondents using information from FAFSA records available for all individuals in the sampling frame.<sup>3</sup> The unweighted means in Table 1 show survey respondents were more likely to be female, older, independent with children, and have greater financial need and higher grade point averages (GPA) than nonrespondents.

To adjust for these differences, we employed inverse probability weighting. We stratified the sample into three categories based on information at the time of their financial aid application (spring 2020) – high school seniors, non-high school seniors who are financially independent from their parents, and non-high school seniors who are financial dependents. These groups were chosen because key variables such as GPA and income are not comparable across these categories.<sup>4</sup> Separately by each category, we estimated probit regression models of the probability of response as a function of student characteristics, specifically: age, income, dependent status, parent education, having children, the higher education segment of the first college listed on the FAFSA, categories of GPA, and categories of Expected Family Contribution (EFC) – which is based on a student's income, assets, household size, and dependency status as reported on the FAFSA. Using the predicted probabilities from these models, we then computed weights equal to the inverse predicted probability of response for respondents and the inverse probability of nonresponse for the nonrespondents.

The second set of columns in Table 1 show sample means after applying these weights. For almost all covariates, the difference between the reweighted respondent and nonrespondent means were much smaller – often near zero – than they were in the unweighted data. The one exception was total income, where the reweighted mean for respondents was much larger than the unweighted mean. This could be due to some high-income respondents receiving very large weights as their response probability was low, which drives up the value of the reweighted mean. While the differences in the covariate means by survey response status are much smaller after reweighting, it is important to recognize that there may be differences in unobserved factors that remain even after reweighting. For instance, even after controlling for the covariates used for reweighting, there may still be differences by response status in access to reliable internet, exposure to COVID-19, and economic hardship due to the economic contraction triggered by social distancing measures.

To assess how student responses varied by financial need, we examined differences by EFC. A lower EFC is associated with lower income/assets and greater financial need, whereas a higher EFC is indicative of higher family income/assets and less financial need. We report results by five

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<sup>2</sup> The survey yielded over 10,000 responses from college students who applied for financial aid for the 2020-21 school year, but did not enroll in fall 2020. Analysis of these responses is underway and will be published as a separate report.

<sup>3</sup> Survey responses were matched to FAFSA records by email address; we were able to match about 90 percent of completed surveys to FAFSA records.

<sup>4</sup> For instance, for dependents, total income refers to family income, but for independent students, total income refers to only the student's income.

EFC bins based loosely on key cutoffs for financial aid eligibility: 0, \$1-\$5,999; \$6,000-\$11,999; \$12,000-\$17,999 and \$18,000 or greater.

**Table 1**  
*Characteristics of Respondents and Analytical Sample*

		Proportion of Respondents			
		Unweighted		Weighted	
		Nonrespondents	Respondents	Nonrespondents	Respondents
Number of Observations		1,290,193	95,444	1,290,193	95,444
Female		59.5	69.3	60.2	60.5
Income & EFC	\$0 EFC	41.4	48.2	41.9	41.7
	\$1 - \$5,999 EFC	26.8	26.9	26.9	26.8
	\$6,000 - \$11,999 EFC	10.5	10.3	10.5	10.5
	\$12,000 - \$17,999 EFC	5.3	4.6	5.2	5.2
	\$18,000+ EFC	15.9	9.9	15.5	15.8
	Average EFC	\$12512.19	\$7560.70	\$12175.68	\$17276.38
	Average Total Income	\$66598.01	\$49333.39	\$65447.24	\$120766.22
GPA	GPA < 2.0	4.2	2.8	4.1	4.1
	2.0 < GPA < 2.5	8.4	7.9	8.3	8.3
	2.5 < GPA < 3.0	16.7	17.9	16.8	16.8
	3.0 < GPA < 3.5	21.1	24.3	21.4	21.3
	3.5 < GPA	21.0	25.0	21.3	21.2
	Missing GPA	28.6	22.0	28.1	28.3
	Average GPA	2.208	2.465	2.225	2.218
Age	23.412	25.376	23.549	23.595	
Dependent	64.9	54.6	64.2	64.2	
Have children	13.1	19.8	13.5	13.4	
College	California Community College (CCC)	37.1	44.8	37.7	37.3
	California State University (CSU)	25.5	26.7	25.6	25.6
	University of California (UC)	11.6	8.6	11.4	11.5
	Private Non-Profit	5.8	5.0	5.7	5.7
	Private For-Profit	2.7	2.3	2.7	2.8

Note: The values represent the percent of respondents in each group, except for shaded rows.

### Findings

Results from the survey substantiate the toll the pandemic has taken on California’s college students and reveal the disproportionate impacts felt by lower-income students along several dimensions: finances, technology access, stress, and disruption of educational progress and academic momentum.

#### Financial Constraints

Six months into the pandemic, many college students were still feeling the financial strain brought on by COVID-19, including a shift in work hours. About one-half of the respondents reported working *fewer* hours as a result of the pandemic, while about one-third reported working *more* hours.

Although survey responses did not substantiate the specific reasons for the shift, underlying economic conditions during the pandemic most certainly affected work hours. The closure of businesses, especially those in the service or entertainment industries, along with the suspension of in-person services on college campuses meant that many students were left without work or reduced hours. One student stated, “I am financially struggling because I don’t have as much hours at work.” For some students, the same economic conditions led to additional work hours as students tried to compensate for lost income in their families. As one respondent described, “my spouse lost [his/her] job due to covid lockdown, I have to work more hours to support for my family.” These shifts in employment were consistently experienced by students at all income levels.

Coupled with changes in work hours, 61% of student respondents experienced changes in their living situation as a result of COVID-19 and nearly one-fifth broke a lease. The shifts in living arrangements were more often experienced by lower-income students (65%) than their higher-income counterparts (58%). Open-ended survey responses paint a vivid picture of the upheaval in students’ living situations. As one student describes:

I signed a lease before covid was really bad so I could not back out of moving when I heard that school would transition to fully online. When I moved, I stayed there for only a month because I eventually found someone to take over my lease. I quit my job to move to a new city. I am now living with my parents, jobless.

In addition to shifts in employment and living situations, nearly half of all respondents reported increased food costs (53%) and higher housing costs (47%) as a result of the pandemic (Table 2). This impact, however, was not universally experienced; more lower-income students reported increased expenses than students with higher incomes. Nearly 60% of zero-EFC students faced higher food costs and 55% experienced increased housing costs, compared to only 42% of their higher-income peers. One respondent described the combined impact of job loss and increased expenses:

COVID-19 has placed my family and me in financial straits; ... My account is in the negative, the children eat more; utilities increased. Fall19 fees generated a hold on account; husband lost job.

**Table 2**  
*Changes in Work, Expenses, and Living Situation as a Result of the Pandemic*

		All Respondents Answering Question	Estimated Family Contribution (EFC) Subgroup				
			\$0	\$1-\$5,999	\$6,000-\$11,999	\$12,000-\$17,999	> \$18,000
<b>Changes in Work Hours</b>							
Work Hours	More	31.11	28.71	32.81	34.16	35.15	30.70
	Fewer	48.43	51.48	49.28	48.29	46.70	40.55
<b>Changes in Expenses</b>							
Food	Increased	53.22	59.97	53.35	49.09	46.09	41.79
	Decreased	9.76	7.77	9.56	10.65	12.16	13.47
Housing	Increased	47.34	55.10	47.54	44.03	39.95	32.88
	Decreased	6.13	5.13	5.93	5.73	8.34	8.43
Transportation	Increased	20.34	23.24	20.18	17.96	18.33	15.83
	Decreased	38.37	36.44	38.63	39.20	40.34	41.42
<b>Changes in Living Situation</b>							
	Change	61.32	64.97	61.02	56.46	56.48	57.92
	Broke a lease	19.63	24.08	19.09	18.07	15.61	12.36

Note: The values represent the percent of respondents in each group.

**Technology and Environmental Difficulties**

In addition to financial strain, students often faced challenges related to their learning environments. Some students lacked access to technology, others struggled with unreliable internet, and many did not have environments conducive to meaningful engagement in online or asynchronous learning. Table 3 shows that even six months into the pandemic, 13% of students did not have a computer readily available and 15% were relying on wireless hotspots, DSL, or dial-up for connectivity. Lack of access to a computer and reliable broadband internet was disproportionately experienced by lower-income students, most likely the result of financial constraints. One respondent describes the impact of unreliable technology:

Covid-19 had a great impact in my classes since my school changed everything online, and because of it, it was very often that my internet failed and was not able to connect to my class or even turn in the assignments.

In addition to challenges with technology, many students also reported not having an environment conducive for online classes or asynchronous learning activities, with notable differences across income levels. Approximately 65% of all students reported that they did not have a quiet place to study and 44% indicated that they did not understand how to access course materials online. The lowest-income students struggled with both of these impediments at greater rates than their higher-income peers. Almost 70% of zero-EFC students did not have a quiet place to study compared to 54% of the highest-EFC students. Additionally, 46% of zero-EFC students could not



access course materials compared to 40% of higher-EFC students. Moreover, a quarter of the lowest-income students had to leave their homes to access reliable internet, whereas only 16% of the highest income students had the same experience. One student described this difficulty as:

Classes being online has impacted my performance as I don't have a quiet place to work on my coursework or attend my classes, with distraction all around. Being a full-time student remotely has also somehow made more coursework and makes it near impossible for me to work as well.

**Table 3**  
*Challenges with Technology and Learning Environment as a Result of the Pandemic*

	All Respondents Answering Question	Estimated Family Contribution (EFC) Subgroup				
		\$0	\$1-\$5,999	\$6,000-\$11,999	\$12,000-\$17,999	> \$18,000
<b>Technology &amp; Learning Environment</b>						
I do not have a quiet space for class or studying	64.90	69.56	66.88	62.66	60.23	53.52
I did not have reliable internet	61.96	63.56	62.21	59.96	60.38	59.54
I struggle with understanding how to access course material	44.08	46.23	44.95	42.82	40.82	39.42
I must leave my house to get good internet	21.93	25.49	21.69	20.00	18.83	16.11
I do not have a computer to use	12.55	16.72	11.98	10.61	8.97	5.91
<b>Internet Access</b>						
Broadband internet service (cable, fiber optic)	69.53	69.53	65.33	76.21	66.20	74.31
Satellite internet service	14.69	14.69	16.81	10.81	16.14	13.80
Using my cell phone (or MiFi) as a hot spot	12.28	12.28	14.37	8.59	14.41	8.55
DSL line	1.71	1.71	1.29	2.15	1.39	2.15
Dial-up modem line	1.26	1.26	1.21	1.99	1.29	0.80
I do not have internet access at home	0.52	0.52	0.98	0.24	0.57	0.38

Note: The values represent the percent of respondents in each group selecting “Sometimes or Very Often.”

*Shifting Responsibilities and Increased Stress*

The statewide closure of businesses, colleges, and schools in response to the pandemic also brought about new, or increased, responsibilities in the home. In addition to financial stress, many college students found themselves taking on more responsibility in their homes, including childcare for their own children or for family members. The combination of financial strain, altered living situations, increased responsibilities at home, and shifts in the learning environment caused tremendous stress.

In their responses to open-ended questions students described how COVID-19 increased anxiety:

My children and I had to move to a more affordable apartment because of lost wages.  
My stress levels are high because I do not have someone to watch my kids while I attend online classes and do homework.  
We are living on a limited income because I do not qualify for unemployment.  
My kids and I are depressed to be indoors.  
My kids and I worry about being contracted with the virus and are full of anxiety.  
My kids are stressed because they miss their family and friends.  
I am stressed because I am living on a very tight budget.

### ***Impeding Educational Progression***

Added responsibilities and personal stress had a detrimental effect on students' engagement in school. Over 70% of respondents reported missing class due to personal stress during the pandemic. Students from lower-income backgrounds were much more likely than their higher-income counterparts to miss class as a result of stress – a gap of over 10 percentage points (Table 4). Further, nearly 40% of respondents indicated that they missed class due to work or childcare responsibilities. Twice as many low-income students as higher-income students reported that family and childcare responsibilities caused them to miss class. Low-income students were also more likely to have work schedules interfere with attending class.

In addition to missed classes and incomplete assignments, many respondents reported that they reduced their course load as a result of COVID-19, mirroring national trends (National Student Clearinghouse, 2021). The reduction in units was much more common among the lowest-income students (50%) than among higher-income students (36% for students in the highest-EFC bin). As one student parent explains:

It has reduced my ability to take 15+ credits as required to graduate on time. I have 3 kids and a significant other in the house all day. The smaller kids need oversight during school hours. Everyone needs meals 3x a day and housework still exists ... I am going to need another year to finish and I am worried I will not have a Cal Grant available because limitations on time given by the Cal Grant.

**Table 4**  
*Responsibility and Stress as a Result of the Pandemic Impede Learning*

	All Respondents Answering Question	Estimated Family Contribution (EFC) Subgroup				
		\$0	\$1-\$5,999	\$6,000- \$11,999	\$12,000- \$17,999	> \$18,000
<b>Missed Class</b>						
I was too stressed because of challenges in my life	70.62	73.06	72.66	70.56	68.07	62.30
I did not have reliable internet	49.60	52.30	50.62	48.05	46.58	43.43
My work schedule interfered with class	41.54	42.02	44.31	44.89	41.50	33.67
I had to take care of my children or family	37.40	45.13	38.30	32.79	30.20	22.42
<b>Reduced Units</b>						
I reduced the number of units I am enrolled in	45.88	50.16	46.94	44.89	41.14	36.26

Note: The values represent the percent of respondents in each group selecting “Sometimes or Very Often.”

### Implications and Conclusion

The results presented here paint a vivid picture of disrupted educational experiences, taxing home lives, and accumulated stress for California college students just six months into the pandemic. The findings echo and expand those from other nationally representative surveys during the same time period (CCCSE, 2021; Goldrick-Rab et al., 2020; Son et al., 2020; Soria et al., 2020). California students report how numerous stressors interrupted their educational trajectories, though these impacts were not uniformly distributed. Students from lower-income backgrounds – those who experienced financial constraints even before the pandemic – were more likely to face increased expenses, changes in living situations, challenges with technology and accessing online learning environments and materials, additional home responsibilities, and work commitments that impeded attendance in class and homework completion.

Now, two years into the pandemic, new evidence suggests that the challenges revealed in our early survey have in fact led to sustained educational disruptions for many students. National statistics indicate a 6.6% decline in undergraduate enrollment between fall 2019 and fall 2021 (Sedmak, 2022), with California among the steepest drops relative to other states (Bulman & Fairlie, 2021; Burke, 2021; National Student Clearinghouse, 2022; Schanzenbach & Turner, 2022). These declines raise deep concerns about whether and how students may return to their intended degree paths. These concerns are particularly acute for low-income students, whose families and communities have been disproportionately impacted by the pandemic (CCCSE, 2021; Goldrick-Rab et al., 2021).

To address continued challenges in enrollment, persistence, and degree attainment exacerbated by the pandemic, California policymakers and education leaders have responded in a number of ways. These include increased investments in COVID-19 safety protocols, such as testing and vaccination policies (Cooper et al., 2020; D’Amico et al., 2022; Kafka, 2021); shifts to remote

and hybrid instruction (Altindag et al., 2021; Bird et al., 2022; Hart et al., 2021); increased technology and connectivity access (Bray, 2021; Kim & Kessler-Eng, 2021; Swaak, 2021); supplemental student financial aid and support for basic needs (Burke, 2021; Zottarelli et al., 2022); and administrative flexibility in registration and enrollment practices as well as grading policies (Altindag et al., 2021).

Among efforts aimed at supporting students' financial and basic needs, California Assembly Bill 132 expanded state financial aid programs to cover the difference between a student's total cost of attendance and other sources of aid; established zero-cost textbook programs; and created basic needs coordinator positions at all California Community Colleges to identify, support, and link students to on- and off-campus housing, food, mental health, and other basic needs services and resources. Colleges are addressing students' needs with federal and state dollars for recovery efforts. For example, many California colleges used their Disaster Relief Emergency Student Financial Aid (DRESFA) and Coronavirus Aid, Relief, and Economic Security (CARES)/Higher Education Emergency Relief Fund (HEERF) dollars for direct supplemental student aid, with varying amounts and eligibility requirements. Additionally, private philanthropy worked to meet students' financial needs during the pandemic. Specific examples include the College Futures Foundation and Mission Asset Fund partnership that established the California College Student Emergency Support Fund to offer one-time \$500 hardship grants for low-income California students to "address emergency needs for the state's low-income college students, including undocumented immigrants, foster youth, and those who are housing insecure."<sup>5</sup>

Even with these efforts to support students, the economic and social consequences of students suspending or abandoning their educational goals may be enormous, both for individuals and for society more broadly. As policymakers and education leaders strive to reengage students in their educational goals, they must first understand continued barriers to college enrollment in the recovery period and then invest resources to directly address students' needs. Colleges can and should collect specific information about financial and basic needs systematically through additional questions on application or financial aid forms or during advising appointments. Financial aid policies must consider more encompassing and sustained reforms in student aid that address the full cost of attendance for low-income students, including direct cash payments and indirect services, such as childcare and housing. Finally, college leaders and instructors must structure courses and academic support to allow for students with a variety of challenges to prioritize class attendance and learning time, which may include shorter courses, asynchronous online courses, and both virtual and in-person learning support options, among others. Such efforts can help restore the promise and opportunity of education for the many individuals with college aspirations, for their families and communities, and for our society and economy at large.

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<sup>5</sup> <https://collegefutures.org/ca-college-student-emergency-support-fund/>

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