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To cite this article: Marla Franco, Monica Erbacher & Elizabeth Pope (2023): COVID-19 and HSIs: Students' Perceptions, Attitudes, and Emotions Surrounding Online Spaces, *Journal of Student Affairs Research and Practice*, DOI: [10.1080/19496591.2022.2144741](https://doi.org/10.1080/19496591.2022.2144741)

To link to this article: <https://doi.org/10.1080/19496591.2022.2144741>



Published online: 11 Jan 2023.



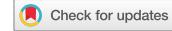
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COVID-19 and HSIs: Students' Perceptions, Attitudes, and Emotions Surrounding Online Spaces

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U.S. higher education institutions have navigated unprecedented challenges to keep their campus communities safe during the COVID-19 pandemic. As the pandemic unfolded, communities of Color and those from low-income households, many of whom attend Hispanic Serving Institutions (HSIs), were found to be disproportionately impacted by COVID-19. In this pandemic-induced context, this longitudinal mixed-methods study explores students' experiences in coping and adapting to rapid changes to instruction and institutional supports during the pandemic at an HSI located in Arizona. HSIs should evaluate the ways in which the institution centered serving college students during the COVID-19 pandemic, particularly those who identify as Hispanic and first generation and those with lower socioeconomic status. This study also leveraged data-informed insights to share with leaders at HSIs in Arizona to guide refinements to institutional practices during the pandemic.

In the spring term of 2020, the COVID-19 pandemic disrupted U.S. higher education institutions, forcing them to navigate unprecedented challenges to keep their campus communities safe while continuing to deliver education and student support services across varying modalities. Higher education leaders had to deliberate and make and, in due course, reevaluate decisions regarding campus closures, safety protocols, a shift to providing online learning and student support, and reentry plans. Many higher education institutions extended spring break and were forced to cease all in-person instruction and services, requiring many students to abruptly depart residence halls at institutions with on-campus housing and shift to online learning (National Association of Student Personnel Administrators, 2020). In some cases, students had no home to return to or experienced unstable or unsupportive home environments, coupled with personal and family financial pressures (Association of Public & Land-Grant Universities, 2020), unreliable access to the internet and essential learning technologies (Means

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et al., 2020). Uncertainties continued as COVID-19 cases surged due to the omicron variant during winter 2021, resulting in many institutions pushing their return-to-campus dates further into 2022 (Moody, 2022).

Institutional context may have influenced decisions made during the pandemic, requiring higher education leaders to account for institutional characteristics such as student density, existing infrastructure to pivot to online learning and supports, and representation of diverse student populations, particularly those who have been disproportionately impacted by COVID-19. Efforts to understand college students' perceptions, attitudes, and emotions surrounding the transition to remote learning during the pandemic is critical for monitoring students, continued engagement in college courses. This information is also critical in determining student challenges and needs to guide decision-making regarding continued relief and recovery efforts. Due to the disproportionate impact of COVID-19 on minoritized communities, higher education institutions have encountered declines in enrollment and are seeking strategies to support students' re-enrollment (Hispanic Association of Colleges and Universities, 2021). This is particularly true for Hispanic Serving Institutions (HSI), which enroll a large proportion of students of Color, first generation students, and students with lower socioeconomic status.

Exploring the impact of COVID-19 on students who attend HSIs is important for several reasons. Federally designated HSIs, which have undergraduate Hispanic enrollments of 25% or more, account for 18% of all higher education institutions in the United States yet they enroll two-thirds of all undergraduate Hispanic college students (Hispanic Association of Colleges and Universities, 2021). In 2022, new data released by the Hispanic Association of Colleges and Universities reported a decrease in the number of HSIs for the first time in 20 years, declining from 569 to 559 HSIs, and the National Student Clearinghouse Research Center (2021) reported a 7% decline in Latino undergraduate enrollment nationally compared with fall 2019 to fall 2021 enrollment.

According to the Centers for Disease Control and Prevention (2021a), the Hispanic population is twice as likely to experience positive cases of COVID-19, three times as likely to be hospitalized, and approximately two times as likely to die of COVID-19, compared to those who identify as White. Social determinants of health, defined as the conditions in which people are born, grow, live, work, and age are all shaped by the distribution of money, power, and resources nationally and locally, resulting in variance in health equity, particularly among communities of Color (Center for Disease Control and Prevention, 2021b). Latinx communities were also hit hard by COVID-19 as a result of their representation among essential workers and multigenerational households (Chavez, 2020). As such, researchers suggest that COVID-19 has exacerbated inequities for students of Color and low-income students (Lederer et al., 2021), urging that more research be undertaken on the pandemic's impact on Latinx college students, particularly at HSIs where three-fourths of these students are enrolled.

During a recent national briefing on HSIs, Education Secretary Miguel Cardona stated, "Equity is a big focus for us moving forward. Institutions like HSIs play a major role in that. So, when we're talking about recovery as a country, we need to acknowledge HSIs and the important work that they do to promote equity and access for all students" (Acevedo, 2021). Studies also suggest that university administrators could best serve students if they better understood the varied impact of COVID-19 on students (Browning et al., 2021). As such, understanding and supporting COVID-19 recovery efforts at HSIs is important for the well-being of Latinx college students across the nation. Therefore, the purpose of this longitudinal mixed-methods study was to explore students' experiences in coping and adapting to rapid changes to instruction and

institutional supports during the pandemic at an HSI located in Arizona. This study also aimed to leverage data-informed insights that were gathered through surveys and interviews that occurred during summer 2020, fall 2020, and spring 2021 to share with leaders at HSIs in Arizona to guide refinements to institutional practices during the pandemic. The research questions that guided this study were as follows: How did students attending an Arizona HSI react and cope with moving to fully online courses? What messages did students perceive from institutional and instructional practices? What strategies and supports worked well or did not work well for students? How did reactions, perceptions, and coping differ for underrepresented and underserved students? The authors used the terms Hispanic and Latinx in ways that reflect their use by original sources and their use at the University of Arizona (UArizona).

Literature Review

The nature of college students' educational experiences radically changed while sheltering in place during the pandemic, posing challenges to students' academic, physical, and mental well-being (Browning et al., 2021). This section summarizes early research studies that examined the impact of COVID-19 on college students, including academic challenges, mental health needs, financial challenges, basic needs insecurity, and household dynamics.

Academic Challenges

Academic difficulties, including the ability to focus on academic work from home and manage online learning, were found to be associated with mental health burdens reported by students during the pandemic (Kecojevic et al., 2020). In a national survey of 1,000 participants conducted by Means et al. (2020), college students indicated that during the pandemic they became less interested in course content, felt less included as a member of the class, and thought that their opportunities to collaborate with their classmates on course work were limited. Students also reported struggling to remain motivated in their online classes, missing the presence of instructors and peers while they learned, and felt that they lost the opportunity to get immediate feedback from instructors concerning their understanding and course performance (Means et al., 2020). A study on undergraduate students attending an HSI during the pandemic indicated that students reported academic challenges during remote learning because of insufficient workspace, unanticipated noise, and family-related obligations (Bell et al., 2022). This study found that remote learning inequities were most prevalent for Pell-eligible, first-generation, female, and Hispanic students.

Mental Health

The accumulation of stressors during the pandemic—including financial concerns, challenges navigating online learning, social isolation, and worries concerning one's own health and that of one's family—has been shown to negatively impact college students' mental health and academic performance (Hoyt et al., 2021; Jones et al., 2021; Kecojevic et al., 2020; Lederer et al., 2021; Wood, 2020). For example, research on the impact of COVID-19 on college students' health at HSIs in New York found that more than half of students (54.5%) reported experiencing anxiety or depression and nearly half (49%) indicated an increased need for mental health services to cope with pandemic-induced stress, anxiety, or depression (Jones et al., 2021). Participants in this study included 2,282 students from across the 25 campuses affiliated with the City University of New York, of which nearly 30% of the study's participants identified as Hispanic (Jones et al., 2021). This study also sought to understand students' coping mechanisms during

the pandemic and found that students increased their use of alcohol (13.6%), marijuana (8.1%), vaping (4%), and cigarette smoking (3.4%; Jones et al., 2021).

Studies found that college students' well-being differed during the pandemic based on their gender and their race and ethnicity, accounting for differences in students' levels of perceived stress and anxiety (Hoyt et al., 2021). For example, survey findings from a national study on college students' perceived stress and anxiety found that women reported higher perceived stress and anxiety symptoms than men; this was attributed to increases in caretaking responsibilities for women upon returning home from college when campuses closed (Hoyt et al., 2021). In this same study, researchers found that Black, mixed race and mixed ethnicity students experienced increases in anxiety from April 2020 to July 2020 (Hoyt et al., 2021), suggesting that for some the severity of COVID-19-related challenges and their associated stressors intensified over time. In a study on Latinx undergraduate students at an HSI, Vazquez et al. (2021) found that 41% of Latino students reported experiencing mental health issues 10 or more times during the previous 30 days during the pandemic and that among students who reported that they had at least one day in which their mental health was not good, 86% did not seek out mental health services. As such, studies recommend that universities ensure that students have access to campus, community, and telehealth mental health services and acknowledge that many students have limited access to affordable mental health services and may have stigmas surrounding seeking mental health care (Jones et al., 2021; Wood, 2020).

Financial Challenges

In a study on stress and anxiety levels among U.S. college students, Hoyt et al. (2021) found that lower-income students reported marginally higher anxiety and stress during the pandemic compared to higher-income students. The study found that students from lower-income households reported that their income was inadequate to meet their needs during the pandemic and that changes in individual and family finances were affecting students' well-being. Several studies indicated that students or someone in the student's household had lost income as a result of the pandemic, including one study at an HSI where 81% of respondents reported having lost income and nearly half reported being very or somewhat worried about losing their housing as a result of the pandemic (Jones et al., 2021). Studies suggest that as the pandemic continues and its economic implications compound, financial stressors for college students may increase and possibly result in declines in students' overall sense of well-being (Hoyt et al., 2021).

Basic Needs Insecurity

College student success is predicated on meeting students' basic human needs, which includes ensuring that students have reliable and consistent access to affordable food, housing, transportation, technology, familial care, and health care (The Hope Center for College, Community and Justice, 2020). Inequitable access to these basic human needs became even more pervasive during the pandemic. In a survey consisting of 195,000 college students nationwide, the Hope Center for College, Community and Justice (2021) found that nearly three in five respondents experienced basic needs insecurity, including 29% who were affected by food insecurity at 4-year institutions and 39% who were affected at 2-year institutions. Housing insecurity was reported to have affected 48% of the participants and 14% of participants indicated that they were homeless. Among students facing basic needs insecurity during the pandemic, access to support was limited and challenging to navigate. Among respondents with basic needs insecurity, 34% had applied for emergency aid, 32% had received

emergency aid funds, 18% had received benefits from the Supplemental Nutrition Assistance Program, and 52% had not applied for support because they did not know how (The Hope Center for College, Community and Justice, 2021). The study also found disparities between basic needs security and use of campus supports, particularly among Latinx females at 4-year colleges, where 60% had experienced need but only 26% had used support.

Latinx Households

Understanding challenges experienced among Latinx households during the pandemic is important for grasping the scope of circumstances that students may have encountered. Findings from a national survey jointly conducted by National Public Radio, Robert Wood Johnson Foundation, and Harvard T. H. Chan School of Public Health (2020) highlighted serious challenges experienced by racial/ethnic minority groups who were at high-risk for getting sick and dying from COVID-19, including Latinx persons. This study was conducted among 3,454 U.S. adults, of which 19% reported as Latinx, and found that a majority of Latinx households reported having experienced serious financial problems (72%) including job loss, furlough, or reduction in wages or hours (63%); problems affording medical care (25%); challenges caring for children (66%) and supporting their remote learning (36%); and having had serious problems with internet connections for use with schoolwork or jobs (49%). These data suggest that many Latinx households experienced impacts of the pandemic across several dimensions of their lives, resulting in a dynamic set of stressors within and across households that may have impacted Latinx college students' experiences.

Conceptual Framework

This study sought to understand students' perceptions, attitudes, and emotions surrounding online spaces and supports among those attending HSIs in Arizona. Given the explicit focus on HSIs, this study was informed by the concept of *servingness*, meaning an HSI's capacity to serve its students, particularly Latinx students (Garcia & Koren, 2020). Garcia (2017) suggests that HSIs centered on *servingness* demonstrate equitable outcomes for Latinx students in addition to offering an organizational culture that affirms and enhances the Latinx student experience. *Servingness* was an essential concept that informed our research design, analysis of findings, and advocacy and decision-making regarding COVID-19 relief and recovery efforts at HSIs in Arizona.

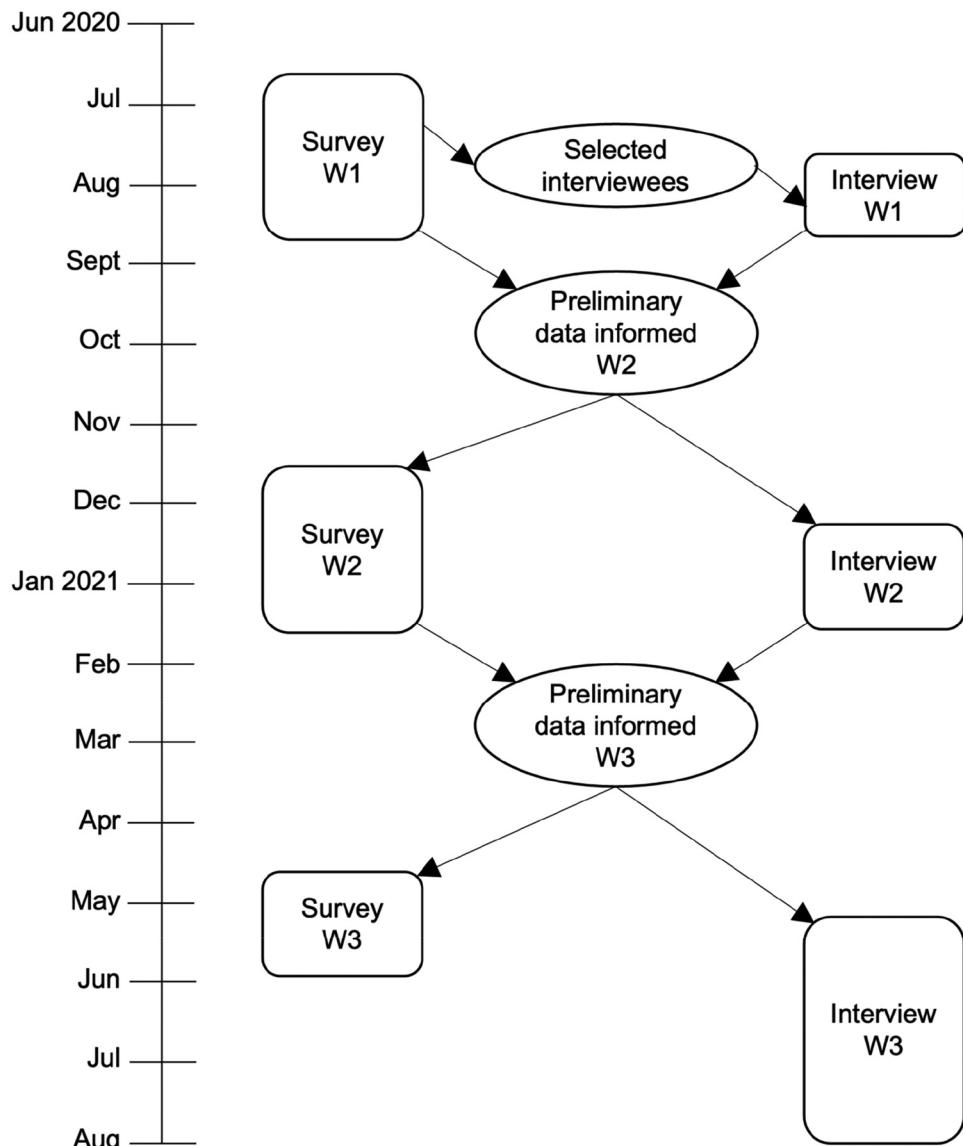
Methodology

The larger longitudinal mixed-methods study collected data from undergraduate and graduate students and instructors at HSIs in Arizona, but this article focused solely on all undergraduate participants at the University of Arizona. Data collection occurred at three points in time (summer 2020, fall 2020, and spring 2021) to shed light on the evolving impact of COVID-19 on students and the institutional responses that ensued. This article includes all UArizona undergraduate participants and their survey responses during summer 2020 and fall 2020, as the third wave of data is still being analyzed. Qualitative data from student interviews during the same two points of data collection were used to triangulate the quantitative findings and further enhance key findings described in this article.

Overview

Figure 1 summarizes the mixed methods research design and timeline of the study. Participants were invited to complete a survey designed to take at most 1 hour, based on average

Figure 1. Mixed methods design and timeline.



response times from previous research with undergraduate students. Participants were recruited through programs that primarily served the study's target population (i.e., cultural and resource centers, multicultural student organizations, equity-focused student support programs) and utilized faculty and staff at UArizona to circulate recruitment materials.

Online surveys were administered during the summer (June through August) and fall (November through January) 2020. The survey included items created by the researchers, such as checklists of challenges and responsibilities participants may have experienced. The survey also included constructs with existing measures such as perceived stress, sleep characteristics, and coping strategies and student demographic questions. Some measures on the summer survey were replaced by alternative constructs on the fall survey, in response to initial findings. The summer survey asked participants to reflect on their experiences during the last half of the spring 2020 semester, after the pandemic had started. Fall items asked participants about their experiences during the fall 2020 semester. Participants were compensated \$20 for taking each survey.

Participants

A total of 205 undergraduate students at UArizona completed the survey administered in summer 2020. The UArizona participant sample was 47.8% Hispanic, 50.7% Pell recipients, and 42.9% first generation college students. Overall, 67.80% of the UArizona students who

Table 1

Demographic Characteristics of Summer 2020 Participants

Characteristic	UA % (n)	UA Latinx/Hispanic % (n)
Total N	205	98
Pell Recipient	50.73 (104)	64.29 (63)
1 st Generation	42.93 (88)	57.14 (56)
Student With a Disability	10.24 (21)	11.22 (11)
Veteran	0.49 (1)	1.02 (1)
Active Duty	0.00 (0)	0.00 (0)
<i>Ethnicity^a</i>		
Hispanic or Latinx	47.80 (98)	
White or Caucasian	41.46 (85)	
Asian or Asian American	25.85 (53)	
Black or African American	6.83 (14)	
Native American	5.85 (12)	
Multiple	18.54 (38)	
<i>Gender</i>		
Woman	62.44 (128)	60.20 (59)
Man	23.41 (48)	29.59 (29)
Nonbinary ^b	2.44 (5)	2.04 (2)
	<i>M (Median), SD</i>	<i>M (Median), SD</i>
Age	21.68 (20.00), 4.68	22.06 (21.00), 5.36

^aParticipants selected all identities that applied to them.

^bNonbinary identities were collapsed to protect participant identity but included genderqueer, agender, nonbinary, nonconforming, two-spirit, genderfluid, questioning, and intersex.

participated in the summer survey also responded in fall 2020. Demographic characteristics for summer 2020 participants are presented in [Table 1](#).

Data Analysis

Responses to open-ended survey items from summer 2020 were coded using a dimensional analysis approach to grounded theory (Kools et al., 1996; Richards & Morse, 2013). The researchers employed the dimensional analysis method so that topics and themes could be modified during and after each wave of data collection (Kools et al., 1996). These data are part of a larger, longitudinal study and participants were asked to respond to some of the same items at different time points during the pandemic. The researchers expected that participant experiences and views would change over time during the pandemic. Utilization of a grounded theory approach was appropriate for this study, as it allowed for the inclusion and consideration of important political, social, economic, and cultural contexts that continue to impact individual experiences during a unique event (Corbin & Strauss, 2008; Richards & Morse, 2013).

After summer 2020 data collection, themes were established by coders based on analyses of topics present within participant responses. Pairs of coders worked to examine the most frequently mentioned topics in response to the following survey items:

- Top three practices instructors engaged in that helped and hindered students most during the pandemic
- Top three practices the institution engaged in that helped and hindered students most during the pandemic
- Biggest concerns going into fall 2020

All responses were coded for each of the open-ended items above using the themes developed. New topics were added to the coding manual that were not captured in the initial topics that represented the most frequent responses. Prior to coding, percent agreement was calculated between coders. Interrater reliability ranged from $r = 0.85$ to 0.95. Responses could be coded with multiple codes. Multiple codes were included in the percent agreement calculations. Any responses that coders were unsure of were coded by consensus.

The codes established in response to the shared items from summer 2020 were used to begin coding data from fall 2020. As codes from summer 2020 were implemented, changes in response pattern and tone were noted and modifications were made based on the new data. The coders determined through consensus whether codes and themes should be modified for coding all fall 2020 responses. Codes for the new item (student life challenges outside of being a student) were established using the same topic and theming process that was used in summer 2020. Three coders worked to examine the most frequently mentioned topics in response to the following items:

- Top three practices instructors engaged in that helped and hindered students most during the pandemic
- Top three practices the institution engaged in that helped and hindered students most during the pandemic
- Three biggest challenges students faced outside of their role as a student during fall 2020

After the codes for all items were finalized, percent agreement was calculated between coders. Interrater reliability ranged from $r = 0.78$ to 0.97 . Procedures for analyzing quantitative data are described along with their associated summary of findings.

Findings

Findings from this mixed-methods study offers valuable insights regarding undergraduate students' experiences during the pandemic while attending UArizona. Qualitative and quantitative findings are discussed in this section and highlight students' concerns regarding instructor practices, institutional decision-making and communication, and concerns for students' safety and learning modality for fall 2020. Students also offered insights regarding their social-emotional experiences and shifts in home life and work responsibilities because of the pandemic.

Qualitative Findings

Findings from open-ended responses offered insight regarding students' perceptions and experiences in coping and adapting to rapid changes to instruction and institutional supports during the COVID-19 pandemic. Qualitative findings also offered insight regarding students' greatest concerns for fall 2020 and their actual experiences during that semester. Select findings from open-ended survey responses collected in summer 2020 and fall 2020 are summarized in this section.

Instructor Practices. Students were asked to indicate through an open-ended survey question the top three practices that their instructors engaged in that helped and hindered students during the pandemic ("What were the top 3 things your instructors did that helped you most during the pandemic? What were the top 3 things your instructors did that hindered you most during the pandemic?"). Students' responses from summer 2020 indicated that flexibility, communication, and reasonable expectations were among the top three practices that instructors engaged in that were most helpful. Examples of flexibility that students indicated were most helpful included self-paced learning opportunities, making recorded lectures available, offering flexible deadlines, and accounting for time zone differences and students' challenging schedules. Examples related to helpful communication included offering students virtual office hours, communicating frequently via email and daily posts in learning management systems, responding in a timely manner to students' emails, and expressing compassion and understanding. Examples related to reasonable expectations included offering a pass/fail grading option, open-note or collaborative exams and extra credit, adjusting the grading curve, and adjusting course workload and expectations. Students felt hindered when these practices were not offered.

Students' responses from fall 2020 indicated that communication, adjusted expectations, and structured resources were among the top three instructor practices that were most helpful. Examples related to communication included faculty's availability for office hours, sending students email reminders about course deadlines, checking-in with students, offering clear guidelines for assignments, and responding to students in a timely manner. Examples related to adjusting expectations were faculty offering flexible deadlines, providing extensions, curving grades, adjusting course workload, and providing opportunities for extra credit. Examples of structured resources that faculty offered included recorded class lectures, instructional resources, study guides, well-organized course schedules, and adjustments to curriculum that were more conducive to the online learning environment. Students felt hindered when these practices were not offered.

Institutional Practices. Students were asked to indicate the top three practices of their institutions that helped and hindered them during the pandemic. Students' responses from summer 2020 indicated that flexibility, communication, and providing resources and financial assistance were the practices that were helpful. Examples of flexibility reported by students included policy accommodations, such as opting into pass/fail grading, extending withdrawal deadlines, and moving in-person classes to online. Responses that indicated communication as a helpful institutional practice included communicating efforts of administrators in response to COVID-19 and sending frequent emails or newsletters to students. Examples of helpful resources cited by students included keeping campus health open, providing information about available resources via email, and providing increased access to academic advisors. Examples of helpful financial resources included continuing to pay student employees for the remainder of the semester despite the campus closure, keeping the campus food pantry open, and providing emergency student funding to qualifying students. Conversely, some students reported that email and newsletter communications were too vague and overwhelming and added to the stress of the pandemic. Additionally, students reported that continued uncertainty about what upcoming semesters would be like prevented them from making important decisions about housing, moving, and getting ready for the fall semester. Some students also expressed a lack of financial support as a hinderance to their educational attainment in spring 2020. Students reported that strict guidelines about who qualified for financial assistance prevented them from accessing financial resources they needed and that being charged the regular tuition and fees was burdensome, especially considering many of the resources associated with fees were no longer available for students.

Student responses regarding institutional practices that were most helpful in fall 2020 were similar in that they included resources and flexibility, but students also mentioned COVID-19 precautions as being helpful. Responses related to resources highlighted increased access to mental and physical health resources on campus as well as virtual events for students. Flexibility was identified again as being important in supporting students, including extended registration deadlines and adjustment to the course drop policy. Students also noted that access to regular COVID-19 testing, access to regular testing for those living on campus, and closing campus when necessary were helpful during fall 2020. However, the continued cost of tuition with insufficient financial assistance proved to be a hinderance for many students. Students also reported feeling unsafe due to inconsistent enforcement of COVID-19 precautions and being required to attend labs in person. Communication from the institution was also identified as a hinderance as it was often vague, unclear, or inconsistent. Students reported feeling unheard or ignored and reported that administration did not understand their concerns and experiences.

Fall 2020 Concerns. Students were asked during summer 2020 to indicate their greatest concerns for fall 2020. The most frequently cited student concerns pertained to safety, instructional modality, loss of connection and community, and financial worries. Students reported feeling angst about their physical safety and well-being, especially about not knowing at the time whether their institution would require in-person attendance during fall 2020 and what safety protocols would be in place to mitigate the spread of COVID-19. Students expressed concern for their own and others' safety, including those whom they lived with. When asked about their greatest concern for fall 2020, one student stated, "That I'm going to get sick and die, or someone I know will get sick and die." Students also reported concerns regarding their ability to focus on school given their worries about staying safe, healthy, and free from COVID-19.

Based on their experiences with swift shifts in learning modalities at the onset of the pandemic, students expressed concern about instructional modality. Students reported a fear of failing in online learning environments. One student reported, “My biggest concern is that we will be moving to online for the whole semester, as it was very difficult to learn in this environment at times.” Students reported experiencing difficulty focusing on their classes and that they were worried about performing well academically and not having the motivation to succeed online. Students were also apprehensive about the quality of an online education.

Students reported feeling socially isolated and a lack of connection and community. At the onset of the pandemic, most institutions only had the bandwidth to focus on quickly transitioning to online learning and ensuring the campus community’s safety. Traditional on-campus student activities mostly ceased to ensure adherence to physical-distancing protocols. In sharing their concerns for fall 2020, a student stated, “A loss of community, a sense of uncertainty, loss of social gatherings and events.” Students also expressed concerns regarding their ability to connect with other students in their classes, which had been helpful to them prior to the pandemic.

Many students reported financial concerns, particularly their ability to cover their educational and daily living expenses; they expressed frustration regarding their perceived value of online education relative to the cost of tuition. A student reported that their “one concern [was] having money to access textbooks for classes.” Out-of-state students also expressed frustration about continuing to pay the nonresident tuition rate even though they were taking online classes. Many students felt that the full cost of tuition should not be charged if online learning continued during the pandemic.

Quantitative Findings

During summer 2020, students were asked about their greatest challenges during the pandemic and how their responsibilities may have shifted, as well as about their stress levels, coping mechanisms, and sleep quality. Findings indicated that some students experienced shifts in their responsibilities as a result of the pandemic, felt increased levels of stress, and experienced poorer quality of sleep. Quantitative survey data offered insight regarding what students dealt with during the onset of the pandemic, including challenges beyond just school-related stressors.

Prominent Challenges. During summer 2020, students were asked to indicate the challenges they experienced as a result of the pandemic, selecting all that applied from a list of response options. The 10 most common challenges experienced at the beginning of the pandemic and during fall 2020 are displayed in [Table 2](#). The most pronounced finding was that every single mental health issue included on the checklist was included in the top 10 most common challenges experienced at the beginning of the pandemic. Also common were internet issues, isolation from loved ones, financial hardship, and poor health of loved ones. As students progressed through the fall semester, depression and anxiety became somewhat more common.

Respondents indicated that their top three challenges were difficulty focusing (90.3%), feeling overwhelmed (85.9%), and difficulty managing their time (84%). Students reported additional challenges as follows: not being able to see loved ones (80.1%), anxiety or panic (75.2%), family responsibilities (63.6%), depression (57.8%), poor or inconsistent internet (53.4%), financial hardship (50%), and poor health of loved ones (48.1%).

During fall 2020, students were asked to identify their top three challenges outside of being a student. Students reported that their top three challenges were their mental health (36.5%), their physical health (10.7%), and financial concerns (10.4%).

Table 2

(a) 10 Most Common Challenges for UArizona Undergraduates and (b) 10 Most Common Challenges for Latinx/Hispanic UArizona Undergraduates

Top 10 at Beginning of Pandemic			Top 10 in Fall 2020	
Challenge	Summer (N = 205)	Fall (N = 153)	Challenge	Fall (N = 153)
Difficulty focusing	90.24	85.62	Overwhelmed	86.27
Overwhelmed	85.85	86.27	Difficulty focusing	85.62
Time-management difficulties	83.90	73.86	Anxiety or panic	79.74
Not able to see loved ones	80.00	71.90	Time management difficulties	73.86
Anxiety or panic	75.61	79.74	Not able to see loved ones	71.90
Family responsibilities	63.41	54.90	Depression	66.67
Depression	58.05	66.67	Family responsibilities	54.90
Poor or inconsistent internet	53.66	50.98	Poor or inconsistent internet	50.98
Financial hardship	50.24	49.02	Financial hardship	49.02
Poor health of loved one(s)	48.29	43.14	Poor health of loved one(s)	43.14

Challenge	Summer (N = 98)	Fall (N = 64)	Challenge	Fall (N = 64)
Challenge	%	%	Challenge	%
Difficulty focusing	94.90	90.63	Overwhelmed	92.19
Time-management difficulties	90.82	76.56	Difficulty focusing	90.63
Overwhelmed	89.80	92.19	Anxiety or panic	89.06
Not able to see loved ones	86.73	76.56	Depression	76.56
Anxiety or panic	85.71	89.06	Time management difficulties	76.56
Family responsibilities	74.49	65.63	Not able to see loved ones	76.56
Depression	64.29	76.56	Family responsibilities	65.63
Financial hardship	59.18	50.00	Poor health of loved one(s)	57.81
Poor health of loved one(s)	54.08	57.81	Poor or inconsistent internet	53.13
Poor or inconsistent internet	52.04	53.13	Financial hardship	50.00

Shifts in Responsibilities. From a list of response options, students were asked during summer 2020 to indicate what their primary responsibilities were prior to the pandemic and at present, which is summarized in Table 3. During the pandemic, students reported a shift in some of their responsibilities, including a shift to working online or remotely (from 12.6% to 36.4%), a decline in in-person employment (from 58.7% to 30.1%), and an increase in contributing financially to family (from 22.3% to 30.6%) and caring for children (from 15.5% to 26.2%). In fall 2020, students indicated slight decreases in remote or online employment, contributing financially to family, and caregiving of children and a slight increase in in-person employment.

Table 3

Five Most Common Student Responsibilities Before the Pandemic Began, at the Beginning of the Pandemic, and During the Fall 2020 Semester

University of Arizona					
Before (N = 205)		Beginning (N = 205)		Fall (N = 153)	
Responsibility	%	Responsibility	%	Responsibility	%
Taking classes	99.02	Taking classes	97.56	Taking classes	98.69
In-person job	58.54	Remote job	36.59	In-person job	34.64
Volunteer work	45.85	Contributing to family financially	30.73	Remote job	31.37
Contributing to family financially	22.44	In-person job	29.76	Volunteer work	24.28
Supporting others' research	21.46	Care for children	26.34	Contributing to family financially	20.92

University of Arizona: Latinx/Hispanic Undergraduates					
Before (N = 98)		Beginning (N = 98)		Fall (N = 64)	
Responsibility	%	Responsibility	%	Responsibility	%
Taking classes	100.00	Taking classes	97.96	Taking classes	100.00
In-person job	65.31	Remote job	40.82	In-person job	45.31
Volunteer work	43.88	Contributing to family financially	34.69	Remote job	32.81
Contributing to family financially	27.55	Care for children	32.65	Contributing to family financially	28.13
Supporting others' research	20.41	In-person job	27.55	Volunteer work	28.13

Stress. After reverse-scoring four of the 10 items on the Perceived Stress Scale (Cohen et al., 1983; Cohen & Williamson, 1988), a mean score was calculated for each respondent. In the summer 2020 survey, which asked about stress during the last half of the spring 2020 semester, 42.93% ($n = 88$) of UArizona undergraduates reported experiencing stress *fairly often* or *very often*, on average (mean score > 3.5). In fall 2020, the percentage of students reporting pervasive stress dropped to 34.42% ($n = 53$) for UArizona undergraduates.

Sleep. Participants completed the Pittsburgh Sleep Quality Index (Buysse et al., 1989) on the summer survey. Items were administered regarding sleep amount, habits, and quality during the last half of the spring 2020 semester. The most helpful item asked participants to rate their overall sleep quality on a 4-point scale of *very bad* to *very good*. On the summer survey, 47.32% ($n = 97$) of UArizona undergraduates reported *very bad* or *fairly bad* sleep quality during the last half of the spring 2020 semester.

Table 4

Five Most and Least Utilized Coping Strategies

University of Arizona				
Coping Strategy	Mean		Coping Strategy	Mean Fall
	Summer	Fall		
Distraction	3.03	3.16	Distraction	3.16
Acceptance	3.02	3.04	Acceptance	3.04
Planning	2.85	3.00	Planning	3.00
Active Coping	2.73	2.86	Active Coping	2.86
Positive Reframing	2.67	2.75	Positive Reframing	2.75
Self-Blame	2.25	2.53	Venting	2.42
Religion	1.93	1.97	Religion	1.97
Disengagement	1.77	1.91	Disengagement	1.91
Denial	1.55	1.55	Denial	1.55
Substance Use	1.53	1.46	Substance Use	1.46

University of Arizona: Latinx/Hispanic Undergraduates				
Coping Strategy	Mean		Coping Strategy	Mean
	Summer	Fall		
Acceptance	3.13	3.12	Distraction	3.24
Distraction	3.09	3.24	Acceptance	3.12
Planning	2.95	3.06	Planning	3.06
Humor	2.77	2.84	Active Coping	2.94
Active Coping	2.76	2.94	Humor	2.84
Self-Blame	2.29	2.59	Venting	2.55
Religion	2.07	1.98	Religion	1.98
Disengagement	1.81	1.92	Disengagement	1.92
Denial	1.59	1.56	Substance Use	1.58
Substance Use	1.56	1.58	Denial	1.56

Coping. Given the pervasive stress and sleep quality issues experienced during the beginning of the pandemic in particular, means of coping with this stress was also analyzed. Students completed the Brief COPE Inventory (Carver, 1997), measuring the use of 14 different coping strategies (see Table 1). Two items measured the use of each strategy. Students were also asked to think about what they usually did when they were under a lot of stress during the last half of the spring 2020 semester and to choose the response option that most reflected how they dealt with stressful events. Response options included *I did not do this at all* (1), *I did this a little* (2), *I did this a medium amount* (3), *I did this a lot* (4). An average was obtained for each pair to produce a mean score for each person on each strategy. We sorted the 14 strategies by sample mean. The five most common and five least common coping strategies are reported for the

beginning of the pandemic and the fall 2020 semester in **Table 4**, including sample means to facilitate comparison as the pandemic progressed.

Three main points emerged from the descriptive statistics in **Table 4**. First, students consistently reported using adaptive coping strategies, such as planning and seeking emotional support, over maladaptive strategies, such as substance use and disengagement. Despite the many challenges, pervasive stress, and lack of quality sleep likely induced by the pandemic, students were resilient in how they coped with these obstacles. Second, means for adaptive coping strategies were higher overall during fall 2020 compared with the beginning of the pandemic. Third, planning became a more commonly used strategy during the fall compared with the beginning of the pandemic.

Discussion

Findings from this study offer valuable insight into students' experiences during the pandemic while attending UArizona. As colleges and universities quickly pivoted to online learning and navigated campus closures, many students in this study reported feeling anxious about the prolonged uncertainty regarding learning modality, expressed fear of contracting COVID-19, felt strained financially, and experienced mental health challenges and shifts in their responsibilities at home and in connection to their families. Similarly, early reports on college students' experiences during the pandemic already began to reveal that students were challenged in their ability to focus on schoolwork from home (Kecojevic et al., 2020); suffered declines in their mental health due to compounding stressors (Hoyt et al., 2021; Jones et al., 2021; Kecojevic et al., 2020; Lederer et al., 2021; Wood, 2020); and particularly among Latinx households, struggled financially (Jones et al., 2021).

Servingness, meaning an institution's capacity toward serving Latinx students at HSIs (Garcia & Koren, 2020), was an essential concept that informed this study and supported advocacy and decision-making regarding COVID-19 relief and recovery efforts at HSIs in Arizona. During each wave of data collection in this longitudinal study, data-informed insights were strategically shared with leaders at participating institutions, which helped generate awareness about students' experiences during the pandemic and supported decision-making regarding safety protocols, educational instruction, student support services, and emergency resource allocations. For example, leaders at the University of Arizona prioritized federal HSI emergency relief funds based on data-informed insights from this study, resulting in an increased inventory of loaner laptops, wifi hotspots, and extended data plans; funding to offset increased costs incurred by the campus food pantry; emergency relief funds designated to cultural resource centers; building a student basic needs infrastructure; funding on-campus student employment including federal work study positions; and implementing a faculty development institute to support culturally responsive teaching practices within the online learning environment. Transparent discussions regarding the use of HSI Relief Funds is recommended to occur across all HSIs, which could generate thoughtful discussion among HSI leaders regarding lessons learned during the pandemic. Aspects of this discussion should also focus on how data were used and monitored to determine spending priorities for HSI Relief Funds.

In centering *servingness* as part of the research process, the researchers created a list of on-campus and community-based resources that were shared with participants after each point in time they participated in the study; these resources included access to food, housing, mental health resources, student emergency funds, and COVID-19 testing. A list of financial, mental-health, and COVID-19-related resources was made available to participants of this study (prior to UArizona making such a list available) and included services and resources in the local

community that were not included by the university. Centering students' needs and experiences and messaging them with a compassionate tone with just-in-time information must be a consistent practice, as suggested by student input from this study.

The longitudinal design of this study demonstrated insightful shifts in the evolving impact of the pandemic on students and corresponding shifts in their coping strategies. The unfortunate longevity of this pandemic has in some ways caused the nature of challenges and their implications for college students to evolve. This is to say, HSIs must be vigilant about the continued impact of the pandemic on students and must proactively anticipate ongoing needs, including but not limited to ensuring access to personal learning tools such as laptops, reliable wifi, mental and physical health care, and access to emergency funds; demonstrating compassion via university communication; and offering flexibility relative to academic expectations and academic policies. HSIs must prioritize funding to support some of the resources and services that were increased to respond to students' needs during the pandemic, as many of these needs persist—particularly mental health resources and other basic needs.

Conclusion

This study documents some of the lived experiences of students attending UArizona during the pandemic, particularly students' experiences in coping and adapting to rapid changes to instruction and institutional supports. Data suggests that mental health, academic and financial support, and safety protocols must be prioritized and adequately resourced as higher education professionals plan for in-person learning, particularly at HSIs, which enroll and serve notable proportions of students who come from communities that have been disproportionately impacted by the pandemic. Students who participated in this study are still being impacted by the pandemic, likely resembling some students' experiences at HSIs across the nation. As funding from the CARES Act wanes, particularly HSI Relief Funds, HSIs must prepare to support the ongoing holistic needs of their students to best ensure their educational success.

Disclosure Statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by the NSF [2033389].

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