Finding Silver Linings: A Mixed Methods Analysis of COVID-19’s Challenges and Opportunities for College Students’ Functioning and Outlook

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Abstract
This study examines the impact of the COVID-19 pandemic on college students’ lives. A mixed methods approach, analyzing open- and closed-ended questions about challenges and opportunities, reveals numerous ways in which the pandemic has impacted students in general and differentially by gender, sexual orientation, race/ethnicity, and family income. Cisgender male and heterosexual students generally reported less of a mental health impact from the pandemic. Gender and sexual minorities, and low- to middle-income students, also noted some effects of the pandemic more often than their peers. Finally, thematic analysis revealed that where students found challenges, they also found opportunities within the broad categories of Lifestyle and Routines, Academic/Professional, Health, Interpersonal, and Societal impacts, evidencing heterogeneity and resilience in finding silver linings despite the challenging pandemic. This research has implications for equitably deploying and tailoring university and mental health resources both during and beyond the pandemic to improve student well-being and success.

Keywords
COVID-19 pandemic, college students, mental health, resilience, qualitative analysis

Introduction
The COVID-19 pandemic has posed unique challenges for specific subpopulations of emerging adults, such as frontline essential workers and college students. Though young people generally face fewer medical risks due to COVID-19, the pandemic particularly disrupted college students’ ways of learning, and in many cases, their social contexts and daily lives too (Son et al., 2020). While the majority of the population was instructed to stay home, many college students were forced to relocate while also adjusting to online school (Conrad et al., 2021). Nonetheless, the college student population is heterogeneous, and the college experience can present additional difficulties for those of marginalized identities in terms of gender, sexual orientation, race/ethnicity, and socioeconomic status. Given the extent to which the pandemic has impacted college students’ day-to-day activities and functioning, and emerging evidence of long-term impact (Scherlinger et al., 2021; Taquet et al., 2021), it is critical to examine the nuanced effects of the pandemic on this population, as well as on various subgroups by gender, sexual orientation, race/ethnicity, and family income.

Over the past decade, college campuses across the United States have faced a mental health crisis (Eiser, 2011), one that is likely to intensify over the years due to the aftermath of the COVID-19 pandemic (Jones et al., 2021). Given the radical and unprecedented changes that colleges and universities are making to manage the effects of the pandemic, this places them in an excellent position to better address the mental health needs of their students. This paper takes an exploratory approach to understanding both the challenges and opportunities presented to college students in the face of the pandemic, and examines the differential impact on marginalized social identity groups. The goal is to understand the varied ways that college students have experienced the pandemic in order to inform the development of university-based prevention and intervention strategies during the ongoing global pandemic.

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**Academic Disruptions**

At the onset of the pandemic, when higher education institutions switched to remote instruction, students reported changes in academic workloads (with some reporting increases and others decreases), distractions caused by altered study spaces, and academic distress (Aucejo et al., 2020; Son et al., 2020). Students also noted concerns about shifting to and engaging in online learning, difficulty staying motivated, and experiencing a variety of negative consequences of pandemic-related academic changes, including dropping courses, delaying graduation, lower grades, and plans to change their major (Aucejo et al., 2020; California Student Aid Commission [CSAC], 2020; Center for Collegiate Mental Health [CCMH], 2020; Janis, 2020). Overall, the pandemic has forced students to adapt and self-regulate their online learning in novel ways (Biwer et al., 2021).

COVID-19 has caused varying degrees of academic disruption to students of different social identities. For example, the pandemic exacerbated a pre-existing technology access gap, disproportionately impacting low-income households (Anderson & Perrin, 2018). An online learning environment may place students of marginalized identities at risk for poorer academic outcomes (Aucejo et al., 2020; Xu & Jaggars, 2014) due to barriers such as lack of a private or dedicated workspace, and inability to keep up with peers when instructors are inflexible (e.g., harsh deadlines, no extensions; Gillis & Krull, 2020).

**Employment and Financial Implications**

Individuals ages 20–24 saw a fourfold increase in unemployment between April 2019 and April 2020 (Inanc, 2020), and in particular, most college students lost some or all of their income by May 2020 (CSAC, 2020). Students reported increased worries about their ability to afford school, as well as about their personal and family’s finances (CSAC, 2020). Such worry and instability can impact student anxiety (Cao et al., 2020). Unsurprisingly, low-income and first-generation college students have been disproportionately impacted in this domain, with changes to their postgraduate career plans (Cohen et al., 2020) and increases in housing insecurity (Soria & Horgos, 2020). Non-White students have worried significantly more about their finances than White peers (Gillis & Krull, 2020), and Latinx and African American students suffered from higher risk of unemployment and limited telework options (American College Health Association [ACHA], 2020).

**Physical and Mental Health Impacts**

While the elderly are at greatest risk for mortality due to COVID-19, the Centers for Disease Control and Prevention (CDC) reports that young adults are at greater risk for contracting and suffering from COVID-19 than the general public may perceive (Boehmer et al., 2020), and still face risks of hospitalization and death (Cunningham et al., 2020). Despite initially low rates of COVID-19 among college students (Healthy Minds Network [HMN], 2020), cases among individuals ages 18–22 increased nearly twofold in September 2020, likely attributable to some college students returning to their campuses (Abbasi, 2020). Moreover, preliminary research suggests that college students are susceptible to experiencing long-term symptoms including fatigue, dyspnea, headaches, exercise intolerance, and appetite loss (e.g., over half of students with COVID-19 demonstrated long-term consequences in Walsh-Messinger et al., 2020).

In addition to physical health, there is emerging literature on the mental health impacts of the pandemic on college students, who already face a variety of mental health challenges (CCMH, 2020). Multiple studies demonstrate increased symptoms following the pandemic’s onset, including anxiety, uncertainty, depression, isolation, distress, sleep and eating disruptions, lack of motivation, and distractibility (Cao et al., 2020; CSAC, 2020; Gillis & Krull, 2020; HMN, 2020; Huckins et al., 2020; Pietrabissa & Simpson, 2020; Rajkumar, 2020; Son et al., 2020). Additionally, Wang et al., 2020 found that college students with relatives suspected or confirmed positive for COVID-19 endorsed higher levels of depressive symptoms than did students without cases among relatives, alluding to the mental health toll resulting from worrying about one’s own and others’ health (Son et al., 2020). An additional risk factor for mental health challenges that has been exacerbated by the pandemic is the loss of relatives (Mortazavi et al., 2020). Finally, COVID-19 “long-haulers” tend to endorse a high prevalence of mental illness (Scherlinger et al., 2021; Taquet et al., 2021), alluding to long-term mental health consequences.

The physical and mental health impacts of the pandemic are disproportionate among marginalized identity groups. For example, in a U.S. national sample of 3000 young adults who had been hospitalized due to COVID-19, 57% were Hispanic or Black (Cunningham et al., 2020), which is out of proportion with the nation’s demographic profile (U.S. Census Bureau, 2021). Additionally, because the virus originated in China, Asian and Asian American students have faced increased xenophobia, microaggressions, and discrimination, resulting in adverse mental health impacts (ACHA, 2020). Further, non-White and female students are more likely to worry about the pandemic than male and White students (Gillis & Krull, 2020; Liu et al., 2020). Finally, LGBTQ+ (lesbian, gay, bisexual, transgender, and queer) students also experience a variety of challenges that have been amplified by the pandemic, including leaving their supportive campus communities and returning to homes where they feel unsafe or unsupported (ACHA, 2020). The minority stress model, which was first researched in LGBTQ+ populations, posits that stressors created by a hostile culture can result in long-term discrimination and victimization against minority populations, thus contributing to, and explaining in part, the health disparities between dominant and marginalized groups (Meyer, 2003; see also Johnson, 2014). As such, literature supports this notion that racial/ethnic, gender, and sexual minority college students experience stress specific to their minority status (Wei et al., 2010; Woodford et al., 2015).
While rates of mental illness have increased throughout the pandemic, access to treatment has changed due to the transition to telehealth. Prior to the pandemic, less than 12% of college mental health clinics had telephone services and less than 4% had video services (LeViness et al., 2019). In addition to this resource barrier, there are regulations enforced by the Health Insurance Portability and Accountability Act (HIPAA) and state medical licensing boards that reduce access to telehealth services, including preventing providers from practicing over state lines (Anderson, 2020). Moreover, limited privacy due to telehealth sessions conducted from students’ homes in the vicinity of others (e.g., parents, spouses) poses another hurdle (Bull et al., 2016; Hadler et al., 2021), which may be heightened for sexual and gender minorities returning to unsupportive environments (ACHA, 2020). Overall, technological barriers and inequities in mental health treatment access and utilization persist, further perpetuating these issues among socially disadvantaged populations (Ojha & Syed, 2020).

Social Interruptions

It is well-established that social connection is critical for emerging adults’ identity formation (Arnett, 2015). However, physical distancing guidelines reduced opportunities for social interaction, and some students experienced a decline in sense of connectedness as a result (particularly Black and Latinx women; Gauthier et al., 2020; Son et al., 2020). Despite this, college students have shown resilience by utilizing their social networks to mitigate the negative effects of the pandemic. For example, 34% of students reported communication with family and friends as a primary method for managing stress and anxiety (Son et al., 2020), and many have used social media to maintain social connection remotely (Andrews et al., 2020).

Another social interruption college students experienced is changes in living environments, with almost half of college students moving to a different location as a result of the pandemic (CSAC, 2020; HMN, 2020). One study found that living with parents was protective against anxiety (Son et al., 2020), while another report found that students endorsed higher levels of family distress in 2020 compared to prior years (Janis, 2020). As independence is a critical component of this developmental period (Arnett, 2006), students who quarantine with their families may feel trapped and tied down by parental rules. Alternatively, students may feel overwhelmed or isolated if quarantining alone without support (Elmer et al., 2020).

Silver Linings: Finding Opportunities in the Face of Challenges

In light of all the challenges that emerging adults have endured, they continue to show resilience. One study revealed that although 23% engaged in negative coping strategies such as unproductive distraction, sleeping longer, and substance use, 29% reported using positive coping strategies including breathing and meditation exercises, spirituality, engaging in routines and hobbies, and positive reframing (Son et al., 2020). In addition, college students working to increase their grit demonstrated resilience in the face of the pandemic as well as decreased psychological impact, and students practicing gratitude have seen decreased academic consequences (Bono et al., 2020).

Despite this, the extant literature has focused primarily on identifying challenges that college students have faced as a result of the pandemic. Some preliminary research explores the various coping strategies that students employ to mitigate the negative effects of COVID-19 on their lives, but there is limited research identifying silver linings that students have found in the face of a global pandemic. In addition to the dearth of relevant qualitative research, there is also a limited understanding of how various social identity groups self-report the unique challenges they have faced due to the pandemic. Given substantial literature on the resilience of marginalized college student groups (Duran, 2019; Llamas & Consoli, 2012; Woodford et al., 2015), it is particularly important to examine the silver linings that these students endorse in the face of adversity. Overall, the virus continues to impact students’ lives, and institutions are considering the implications of re-opening their campuses amid uncertainties about reaching and maintaining herd immunity despite the proliferation of virus variants (Aschwanden, 2021). Thus, it is imperative to understand both the negative effects and the opportunities – in other words, the silver linings – that have emerged.

Current Study

Building on prior research, the current study takes an exploratory approach to examine the impact of the COVID-19 pandemic on college students’ mental health and well-being. Specifically, using both open- and closed-ended questions, we used a mixed methods design with an emphasis on involving the voices of college-attending emerging adults, and understanding the differential impact of the pandemic on students of diverse social identities. Using qualitative data, we examined both challenges and opportunities, taking a strengths-based approach that reveals ways to build coping and resilience during acute life disruptions. Using both qualitative and quantitative data, we examined group differences in the impact of COVID-19 on psychological well-being, as well as on student-identified themes, shedding light on inequities, health disparities, and social injustices toward marginalized or underrepresented populations. We conclude by suggesting optimal ways to tailor university and mental health resources through the pandemic and beyond.

Method

Mixed Methods Approach

We followed Fetters and colleagues’ (2013) principles and practices for integration in mixed methods research. Using a parallel convergent design, we collected qualitative and
quantitative data simultaneously, analyzed them separately, and then merged the databases together. We connected the data by using qualitative and quantitative data from the same participants. At the interpretation and reporting level, we integrated through narrative with a contiguous approach for our thematic analysis and analyses of variance (described below) comparing various identities on COVID-19 outcomes. We also integrated through data transformation by converting our qualitative data into quantitative data, providing frequencies of codes, and conducting chi-square analyses on endorsement of themes.

Table 1. Student Demographics, Ratings of COVID-19 Impact, and ANOVA Statistics on Group Differences.

| Student Identities/Experiences | N (%)  | Isolation M (SD) | Worry M (SD) | Mental Health M (SD) |
|-------------------------------|--------|-----------------|--------------|----------------------|
| All students                  | 491 (100%) | 5.09 (1.62) | 4.92 (1.53) | 4.82 (1.80) |
| Gender¹                       |        |                |              |                      |
| Cisgender male                | 83 (16.90%) | 4.70 (1.46) | 4.37 (1.65) | 4.04 (2.00) |
| Cisgender female              | 396 (80.65%) | 5.17 (1.65) | 5.02 (1.47) | 4.99 (1.72) |
| Transgender female            | 2 (0.41%)  | 5.50 (0.71)  | 7.00 (0.00) | 5.00 (1.41) |
| Non-binary or genderqueer     | 8 (1.63%)  | 4.63 (1.80)  | 5.75 (1.39) | 4.63 (1.69) |
| ANOVAs                        |        |                |              |                      |
| F(2,486) = 2.87, η² = .01, p = .058 | f(2,486) = 8.52, η² = .03, p < .001 | f(2,486) = 10.31, η² = .04, p < .001 |
| Sexual orientation²           |        |                |              |                      |
| Heterosexual                  | 354 (72.10%) | 4.93 (1.65) | 4.81 (1.54) | 4.56 (1.84) |
| Bisexual                      | 64 (13.03%) | 5.48 (1.36) | 5.20 (1.37) | 5.80 (1.44) |
| Gay/lesbian                   | 13 (2.65%)  | 5.23 (1.17)  | 4.77 (1.24) | 5.00 (1.63) |
| Other (e.g., asexual)         | 56 (11.41%) | 5.50 (1.67) | 5.27 (1.59) | 5.38 (1.51) |
| ANOVAs                        |        |                |              |                      |
| F(3, 483) = 3.69, η² = .02, p = .012 | f(3, 483) = 2.40, η² = .01, p = .067 | f(3, 483) = 11.21, η² = .07, p < .001 |
| Race/ethnicity³               |        |                |              |                      |
| African American              | 26 (5.29%)  | 5.04 (2.07)  | 4.58 (1.79) | 4.81 (1.70) |
| Hispanic/Latinx               | 75 (15.27%) | 5.17 (1.47) | 5.16 (1.53) | 4.68 (1.89) |
| Asian [American]/Pacific Islander | 75 (15.27%) | 4.71 (1.68) | 4.92 (1.67) | 4.52 (1.99) |
| Middle Eastern/Arab           | 9 (1.83%)   | 4.89 (1.76)  | 5.44 (1.33) | 3.11 (2.42) |
| Non-Hispanic White            | 234 (47.66%) | 5.25 (1.54) | 4.89 (1.45) | 5.00 (1.68) |
| Hispanic White                | 27 (5.50%)  | 4.93 (1.69)  | 4.96 (1.37) | 4.74 (1.91) |
| Multiracial                   | 39 (7.94%)  | 5.00 (1.82)  | 4.90 (1.71) | 5.28 (1.40) |
| Other not fitting above       | 3 (0.61%)   | 3.00 (1.00)  | 3.33 (1.53) | 2.33 (0.58) |
| ANOVAs                        |        |                |              |                      |
| F(6,478) = 1.22, η² = .02, p = .295 | f(6,478) = 0.71, η² = .01, p = .638 | f(6,478) = 2.67, η² = .03, p = .015 |
| Family income⁴               |        |                |              |                      |
| Lower income                  | 158 (32.18%) | 5.06 (1.67) | 5.05 (1.48) | 4.73 (1.84) |
| Middle income                 | 180 (36.66%) | 5.07 (1.60) | 4.95 (1.56) | 4.92 (1.73) |
| Upper income                  | 144 (29.33%) | 5.12 (1.60) | 4.76 (1.55) | 4.80 (1.85) |
| ANOVAs                        |        |                |              |                      |
| F(2,479) = 0.049, η² = .00, p = .952 | f(2,479) = 1.43, η² = .01, p = .241 | f(2,479) = 0.479, η² = .00, p = .620 |

Ns do not always add up to 491 due to some nonresponse. Means and standard deviations in the final three columns reflect responses on the three closed-ended questions about the mental health impacts of COVID-19, using a Likert scale ranging from 1 (Not at All) to 7 (Extremely).

¹Due to small ns, we collapsed the last two categories for ANOVAs.

²Responses collapsed into the “other” category include students who identified as queer, questioning, no label, asexual, pansexual, demisexual, biromantic, and panromantic.

³Due to small ns, we omitted the “other” category (e.g., selected “other” but did not elaborate) from ANOVAs.

⁴Students’ estimates of their family’s annual income were reported in slightly different categories across studies but generally fell into these brackets: Lower: < $55,000; Middle: $55,000–$135,000; Upper: > $135,000.

Participants and Procedures

Participants included 491 college students (Mage = 19.14, SDage = 1.36; 20.57% first-year, 15.27% sophomore, 24.24% junior, 28.92% senior, 1.02% other; additional demographics in Table 1) at a midsized, Midwestern, largely residential university in the United States. In response to the COVID-19 pandemic, this university closed its campuses on March 13, 2020, and held its classes virtually from that point through the end of 2020, paralleling similar restrictions on gatherings in the state at that time.
After the onset of the COVID-19 pandemic, identical questions about the impact of COVID-19 were prospectively added to surveys administered in April (82.89% of participants) and September (17.11% of participants) 2020, through three separate, ongoing, IRB-approved research studies of college student well-being, including (1) an intervention, embedded into routine academic advising and similar academic support services, intended to promote help-seeking for mental health (Conley et al., 2021a), (2) a randomized controlled trial of a mindfulness mobile application for college students with elevated depression (Conley et al., 2021b), and (3) a classroom-based social-emotional skills-building intervention aimed at helping students effectively transition out of college (Shalwani et al., 2020). Surveys were sent electronically to students across these three ongoing studies via secure Qualtrics links.

Participation was voluntary and participants were compensated with course credit if enrolled in eligible courses (e.g., PSYC 100 or 101, UNIV 101 or 224) and/or small financial incentives (e.g., $5–$10 per survey completed) if they participated outside of eligible courses.

Data Collection

Participants were asked to report demographic information (e.g., gender identity, sexual orientation, race/ethnicity, and income). Response options for demographic information differed slightly across studies and were combined based on overlapping responses for the purposes of the present analyses (see Table 1).

Students were asked to answer three questions using a Likert scale ranging from 1 (Not at All) to 7 (Extremely): (a) Given recent recommendations for social distancing and shelter-in-place, how socially isolated are you feeling? (b) How worried do you feel about the COVID-19 global pandemic? and (c) To what extent do you feel the ongoing COVID-19 situation is affecting your mental health?

Participants were also asked to identify challenges and opportunities related to the COVID-19 pandemic through two open-ended questions: (d) What challenges (e.g., personally testing positive, friends/loved ones testing positive, financial concerns) or disruptions (e.g., moving, changes to daily routine) to your life are you experiencing due to COVID-19? and (e) What opportunities or silver linings in your life are you experiencing due to COVID-19?

Data Analysis

Mental Health Impact Ratings: Differential Responses by Social Identities. We calculated means and SDs for students’ responses to the closed-ended questions about the mental health impacts of COVID-19 (isolation, worry, and mental health). We then ran analyses of variance (ANOVAs), using isolation, worry, and mental health as outcome variables with four social identity group factors (gender, sexual orientation, race/ethnicity, and family income). Post-hoc pairwise comparisons using Tukey’s HSD were used to probe significant differences.

Open-Ended Challenges and Opportunities: Qualitative Analysis of Themes. In order to identify and analyze patterns within the qualitative data, we followed standard guidelines for thematic analysis (see Braun & Clarke, 2006). This six-step, atheoretical process involves becoming familiar with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing a report. We took an inductive approach (Hayes, 2000), reading and categorizing the data based on patterns of commonality rather than pre-existing theory. Thus, the analysis was data-driven and themes were strongly linked to the data. We also adopted a semantic and realist view, meaning the personal motivations and experiences expressed by participants were assumed to reflect reality (Clarke & Braun, 2017). Despite using an inductive approach, we recognize that our analysis was likely to be guided by previous research and pre-existing theories that may have influenced our conceptualization of the data.

A thematic analysis was conducted for each of the two domains: challenges and opportunities. To begin, one researcher (first author) read and reread each response so that they were familiar to her, beginning to identify meaningful units of text and creating a coding scheme. She then coded the responses line by line and assigned codes such that each person’s response could contain elements that reflected multiple different codes (Hayes, 2000). This step was repeated by a second coder to ensure accuracy and reliability of the codes. Subsequently, the two coders met to review and revise codes and resolve discrepancies. The level of interrater reliability was excellent both for challenges (κ = 0.87) and opportunities (κ = 0.92). All authors were then provided the list of codes generated by the two coders, and each author independently organized the codes into themes based on patterns of commonality. Subsequently, authors convened to discuss and contrast their thematic groupings, a consensus was reached, and an initial thematic map was constructed (see Table 2). The analysis was exhaustive in that 100% of the data were allocated to at least one category. Direct quotes from students were grouped under thematic headings (Breakwell, 1995), providing a clear illustration of each theme in participants’ own words. We also indicated the number of participants who addressed each theme, suggesting the extent to which a particular experience was broadly shared among participants (see Table 3).

Open-Ended Challenges and Opportunities: Differential Responses by Social Identities. Given prior literature indicating pre-existing and pandemic-intensified inequities, physical and mental health disparities, and social injustices toward certain groups, we examined whether greater proportions of students with
minoritized identities would endorse certain themes. These analyses were largely exploratory. For example, as race/ethnicity and financial status are linked to adverse socioeco-nomic and health outcomes, we conducted select chi-square tests of independence to explore whether there were differences in students’ likelihood of mentioning: (1) academic/productivity and financial concerns by race/ethnicity and income, and (2) virus-related concerns by race/ethnicity and income. In addition, as the pandemic may disproportionately disrupt the social lives and mental health of sexual and gender minority students who rely on their peers for support, we also conducted chi-square tests of independence to examine whether there were differences in students’ likelihood of mentioning (3) mental health consequences by gender, sexual orientation, race/ethnicity and income, and (4) social impacts by gender and sexual orientation.

Results

Mental Health Impact Ratings: Differential Responses by Social Identities

Table 1 presents means and SDs for responses to the Likert scale items, both overall and broken down by gender, sexual orientation, race/ethnicity, and family income, as well as ANOVAs comparing groups on the degree to which they reported COVID-19 was affecting their social isolation, worry, and mental health.

Gender. Due to small ns, we combined the last two gender categories for ANOVAs (see Table 1). Post-hoc pairwise contrasts using Tukey’s HSD indicated that cisgender males, compared to cisgender females, reported significantly lower effects due to COVID-19 on all three outcomes (ps < .05), and compared to other genders, reported less worry (p = .005).

Sexual Orientation. Following up on the ANOVAs in Table 1, post-hoc pairwise contrasts using Tukey’s HSD indicated that heterosexual students reported significantly lower effects of COVID-19 on their mental health than did students who identified as bisexual and students who reported another sexual orientation than heterosexual, bisexual, gay, or lesbian (ps < .05). Heterosexual students also reported feeling less isolated than students who identified as bisexual, a difference that approached significance (p = .055).

Race/Ethnicity. Post-hoc pairwise comparisons following up on the ANOVAs in Table 1 indicated that the nine students who identified as Middle Eastern or Arab had lower self-reported mental health impacts compared to the students who identified as White non-Hispanic (p = .03) and to those who identified as multiracial/ethnic (p = .017). This finding should be interpreted with caution due to the comparatively small number of Middle Eastern or Arab students.

Family Income. There were no significant differences in the mental health impacts of COVID-19 among categories of self-reported family income (see Table 1).

Open-Ended Challenges and Opportunities: Qualitative Analysis of Themes

Qualitative analysis of the data focused on emerging adults’ interpretations of the impact of COVID-19 on their lives, including the challenges and opportunities. Four hundred twenty-six students responded to the challenges (86.76%) and 392 (79.84%) responded to the opportunities questions, with a total of 429 (87.37%) responding to either open-ended question. The inductive thematic analysis resulted in six broad categories (Lifestyle and Routines, Academic/Professional, Health, Interpersonal, Societal, and None; see Table 2), with 11 themes emerging for COVID-19 challenges and nine for COVID-19 opportunities. Below we present the results and offer some brief context, which we further elaborate on in the discussion.
Table 3. Themes and Codes of College Students’ Identified Challenges and Opportunities of the COVID-19 Pandemic, with Selected Participant Quotes.

| Themes | Participants, (%) | Example Quotes |
|--------|-------------------|----------------|
| Codes  |                   |                |
| **Challenges (N = 426)** |                   |                |
| Disruptions in life and routines | 218 (50.82%) | “Every piece of my routine and doing what I love was completely disrupted.” |
| Changes in routine | 107 (24.94%) | “I was studying abroad this semester and had to return over 2 months early.” |
| Change of plans/missed opportunities | 51 (11.89%) | “Having a 3 day’s notice to move all my belongings from Chicago to California.” |
| Moving | 79 (18.41%) | “It’s a lot more boring and monotonous.” |
| Miscellaneous | 3 (.70%) | “Having to stay cooped up in the house is driving me crazy.” |
| Feeling stuck at home | 26 (6.06%) | “I am graduating in two weeks with no celebration… I have no sense of closure from [school]. I have had no way to wrap up my college experience. I feel that my senior year and post grad hopes have been stolen from me.” |
| Uncertainty | 12 (2.80%) | “No personal space/lack of alone time” |
| Sense of loss | 14 (3.26%) | “I have less personal space and privacy.” |
| Loss of pleasurable/extracurricular activities | 15 (3.50%) | “I have no motivation to do anything academically, I struggle majorly with online classes and keeping to due dates in this kind of environment.” |
| Loss of independence and autonomy | 32 (7.46%) | “The internet connection at my residence is unstable and the bathroom is one of the only private and quiet areas to work in.” |
| No personal space/lack of alone time | 18 (4.20%) | “I have no motivation to do anything academically, I struggle majorly with online classes and keeping to due dates in this kind of environment.” |
| Lack of independence/freedom | 4 (0.93%) | “My understanding of subjects has decreased, and my grades have plummeted.” |
| Academic/productivity concerns | 114 (26.57%) | “Having to drop a course due to a stressful time learning on Zoom lectures.” |
| Classes become more difficult | 21 (4.90%) | “Having to stay cooped up in the house is driving me crazy.” |
| Feeling unsuccessful/unproductive | 7 (1.63%) | “I have no motivation to do anything academically, I struggle majorly with online classes and keeping to due dates in this kind of environment.” |
| Internet connectivity problems | 3 (0.70%) | “I have less personal space and privacy.” |
| Lack of motivation: Academic | 14 (3.26%) | “I have less personal space and privacy.” |
| Lack of educational resources | 8 (1.86%) | “The internet connection at my residence is unstable and the bathroom is one of the only private and quiet areas to work in.” |
| Decline in school performance | 6 (1.40%) | “I have no motivation to do anything academically, I struggle majorly with online classes and keeping to due dates in this kind of environment.” |
| Academic difficulties | 69 (16.08%) | “I have no motivation to do anything academically, I struggle majorly with online classes and keeping to due dates in this kind of environment.” |
| Increase in distractions | 9 (2.10%) | “My house is loud so it can be somewhat distracting to accomplish my tasks.” |
| Lack of focus | 13 (3.03%) | “I have to try very hard to focus on schoolwork.” |
| Financial concerns | 145 (33.80%) | “I have to try very hard to focus on schoolwork.” |
| Financial concerns | 107 (24.94%) | “Not being able to apply for any financial assistance, can barely afford food, can’t pay rent.” |
| Job instability | 39 (9.09%) | “My potential jobs were put on hold.” |
| Job loss | 29 (6.76%) | “I lost my job and now I’m broke and I don’t know how I’m gonna afford an apartment off-campus.” |
| Physical health consequences | 26 (6.06%) | “Can’t be as physically active.” |
| Decrease in exercise/physical health | 12 (2.80%) | “Nightmares and poor sleep quality.” |
| Disruptions in sleep habits | 13 (3.03%) | “Nightmares and poor sleep quality.” |
Table 3. (continued)

| Codes                                                                 | Participants, (%) | Example Quotes                                                                 |
|----------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------|
| Challenges (N = 426)                                                 |                   |                                                                                 |
| Negative consequences of too much screen time                        | 4 (0.93%)         | “Physical sickness from too much screen-time.”                                  |
| Mental health consequences                                          | 109 (25.40%)      |                                                                                 |
| Lack of access to mental health resources                            | 10 (2.33%)        | “Unable to get therapy.”                                                        |
| Mental health concerns                                              | 55 (12.82%)       | “I feel like I have hit rock bottom with my mental health.”                     |
| Stress                                                              | 24 (5.59%)        | “Everything feels out of balance. I’ve been more stressed, frequently overwhelmed.” |
| Lack of energy                                                       | 2 (0.47%)         | “I’m spiraling but I don’t have the energy to care enough to fix it.”           |
| Hopelessness                                                         | 7 (1.63%)         | “Since the virus will likely not fully subside for over five years, I feel there is nearly no safe means of career advancement possible unless remote or online.” |
| Loneliness/isolation                                                | 40 (9.32%)        | “Without being surrounded by people it’s hard not to feel lonely.”              |
| Social anxiety                                                      | 3 (0.70%)         | “More anxiousness socially.”                                                    |
| Lack of motivation: Mental health                                    | 10 (2.33%)        | “Finding motivation is a pretty grueling task in quarantine.”                    |
| Virus-related concerns                                              | 106 (24.71%)      |                                                                                 |
| Concern for loved one                                               | 57 (13.29%)       | “Since my parents are healthcare workers who come into contact with people who have COVID-19, I worry all the time that they’ll get sick and die.” |
| Concern for personal health                                         | 20 (4.66%)        | “Feeling anxious about catching or passing on the illness.”                     |
| Loved one diagnosed                                                 | 39 (9.09%)        | “At the beginning of August, my mother tested positively for COVID-19, even though we had been limiting our time in crowded areas/ groups of 15+. She was gravely ill and I feared the absolute worst.” |
| Loved one passed away due to COVID-19                                | 12 (2.80%)        | “Two family members dying from this terrible virus.”                            |
| Loved one passed away not due to COVID-19                            | 4 (0.93%)         | “This summer my father passed in the midst of COVID, but not from COVID itself.” |
| Personally diagnosed                                                | 2 (0.47%)         | “I tested positive.”                                                            |
| Loss of social connection                                           | 93 (21.68%)       |                                                                                 |
| Distance from/inability to see loved ones                            | 33 (7.69%)        | “I have (also) been unable to see my family since January. I miss them terribly.” |
| Lack of support system                                              | 5 (1.17%)         | “Not having my main support system around me.”                                  |
| Decrease in social connection                                       | 61 (14.22%)       | “I am struggling with the lack of human interaction. I miss being able to see my friends in class, hangout with friends outside of class, and sitting in on lectures in person.” |
| Romantic concerns                                                   | 5 (1.17%)         | “Unable to pursue romantic relationships.”                                      |
| Challenges with family environment                                   | 36 (8.39%)        |                                                                                 |
| Family disputes                                                     | 7 (1.63%)         | “Exposure to family fighting.”                                                  |
| Challenges living with family at home                               | 17 (3.96%)        | “It is hard to be stuck with my family because they can sometimes be overwhelming and have high expectations.” |
| Caretaking responsibilities                                          | 6 (1.40%)         | “I have to take care of my siblings on top of all of my responsibilities in class.” |
| Balancing home/school life                                          | 7 (1.63%)         | “Having to concentrate on school and family.”                                   |
| Move home to a problematic family environment where family is not accepting of identity | 4 (0.93%) | “Had to move home to a homophobic family as a gay man.” |
| Societal concerns                                                   | 23 (5.36%)        |                                                                                 |
| Concern over current state of the world                              | 12 (2.80%)        | “Given the constant racial injustice, the present pandemic, the coming election, my future employment – it all just compounds and exacerbates my mental health.” |
| Frustration with how others are dealing with COVID-19                | 13 (3.03%)        | “I am consistently discouraged by the general public’s unwillingness to take public health measures seriously.” |

(continued)
Table 3. (continued)

| Codes | Participants (%) | Example Quotes |
|-------|------------------|----------------|
| **Challenges (N = 426)** | | |
| Helplessness | 2 (0.47%) | “Harder to help those in need.” |
| None | 7 (1.63%) | |
| None | 7 (1.63%) | “Nothing.” |
| **Opportunities (N = 392)** | | |
| Leisure time | 98 (22.84%) | |
| Creative outlets | 11 (2.56%) | “I have discovered different artistic and creative outlets.” |
| More control over schedule | 41 (9.56%) | “Moving at my own pace.” |
| More time for pleasurable activities | 45 (10.49%) | “More time to do the things I love.” |
| Miscellaneous | 4 (0.93%) | “No line at Taco Bell.” |
| Learning new things | 7 (1.63%) | “Learning new languages and skills.” |
| Watching TV | 4 (0.93%) | “Time to catch up on TV shows I’ve been meaning to watch.” |
| Academic/professional opportunities | 33 (7.69%) | |
| More time to focus on school | 18 (4.20%) | “I get to focus more on my school work without distractions and I plan to take online summer classes and get ahead on my curriculum.” |
| Time to prepare for future | 7 (1.63%) | “I have time to plan future organizations I want to get involved in, and I was able to work on improving my resume and applying for jobs/internships.” |
| Classes become easier | 10 (2.33%) | “Professors are more understanding in general. More material is being provided for us. Classes are slightly more laid back.” |
| Financial opportunities | 29 (6.76%) | |
| Saving money | 13 (3.03%) | “I save money because I am not going out nor utilizing transportation as much as before.” |
| Job opportunities | 16 (3.73%) | “There are more job opportunities for me in nursing due to the pandemic.” |
| Physical health behaviors | 36 (8.39%) | |
| Increase in exercise routine/physical health | 21 (4.90%) | “Opportunity to focus on health and fitness goals through the extra time I have to work out.” |
| Better sleeping patterns | 16 (3.73%) | “Improving sleeping habits.” |
| Intrapersonal opportunities | 100 (23.31%) | |
| Alone time | 6 (1.40%) | “Ability to... have more time to myself.” |
| Self-reflection | 20 (4.66%) | “Having the time to reflect on myself and my life more.” |
| Less stress | 4 (0.93%) | “Be at peace. Not worrying as much about other things.” |
| Improvements in mental health | 7 (1.63%) | “I feel as though my mental health has improved. I am much less anxious than I was before classes went online.” |
| Time for rest/relaxation | 13 (3.03%) | “Finding time to just sit and relax.” |
| More time to focus on self/self-improvement | 32 (7.46%) | “Develop myself in ways I didn’t think I had time for.” |
| Increase in religion/spirituality | 3 (0.70%) | “I have used this time to grow in my faith and get closer to God.” |
| Optimism | 9 (2.10%) | “More optimism about ways our society can start operating as a collective and caring for our communal health.” |
| Gratitude | 24 (5.59%) | “I have realized that life is very precious and that human connection is the only thing that really matters.” |
| Enhanced social connection | 166 (38.68%) | |
| More time with family | 107 (24.94%) | “This is the first time in many years that my whole family has been together, and it’s really nice to have that again.” |
| More time with significant other | 10 (2.33%) | “More time with my boyfriend.” |
| Enhanced family relationships | 22 (5.13%) | “Blessed to have my family with me and experiencing closer familial ties with my immediate family members.” |
| Enhanced romantic relationship | 4 (0.93%) | “I have grown closer with my boyfriend.” |
| Enhanced social relationships | 19 (4.43%) | “Stronger friendships.” |
**Challenges.** Frequencies of theme endorsement as well as sample quotes are provided in Table 3. For space reasons, we did not address every single code in text (see Table 3 for the full list of codes).

**Category 1: Lifestyle and Routines. Theme 1: Disruptions in Life and Routines (50.82%).** The most widespread challenge was disruptions to students’ daily lives and routines. For some, this meant relocating to a different state or even country (18.41%). A few students also experienced a great sense of loss associated with the campus shutdown (3.26%). Further, canceled graduations and abrupt departures from friends and mentors left students, especially college seniors, without closure. As one student stated, “It is sad to think about what should have been. I miss my old routine.” The college environment also afforded students the opportunity to practice pleasurable or extracurricular activities, which some felt deprived of once campus shut down (3.50%). Universities can encompass not only students’ academic world, but also their housing, dining, social context, and health services. Thus, the pandemic complicated nearly all aspects of college students’ lives and routines.

**Theme 2: Loss of Independence and Autonomy (7.46%).** Transitioning to life back home felt like a regression to some students. They missed the flexibility and independence that came with living on their own (0.93%). As one student remarked, “I have no place to have time for myself.” There were legitimate spatial concerns; some students felt cramped in a small home and/or had to share a room with siblings (4.20%). Gaining independence is a defining feature of college for many students (Arnett, 2016), and the loss of campus life likely disrupted their development in this area.

**Category 2: Academic/Professional. Theme 3: Academic/ Productivity Concerns (26.57%).** The transition to online learning challenged students in many ways. One student explained, “The switch to online classes has been extremely difficult. I feel like I’m not learning anything. My understanding of subjects has decreased, and my grades have plummeted. This has by far been the worst semester I’ve ever had.” At the institutional level, a common concern was that instructors were expecting more out of students, assigning more homework, or assuming that students had more time to meet (4.90%). At the individual level, many students simply struggled to learn online. Due to academic difficulties (16.08%), one student reported dropping a course, one student reported taking a semester off, and one student said she would forgo the opportunity to attend graduate school if she knew classes were being taught online. Without having lectures in person, it was not only difficult for students to grasp information, but also to hold themselves accountable and meet deadlines. Additionally, there were barriers to the educational experience, including internet connectivity problems (0.70%) and a lack of access to educational resources (1.86%) that were once afforded to students on campus. These experiences suggest frustration and resentment toward the pandemic’s disruption in higher education learning, perhaps because education is the primary reason many emerging adults choose to attend college.

**Theme 4: Financial Concerns (33.80%).** Economic challenges among college students ranged from general “financial concerns” to the extreme inability to pay for basic needs. Job-related concerns also existed on a spectrum ranging from lost internships or temporary furloughs to the loss of an essential source of income. One student expressed, “I lost my job. My
very first career opportunity was taken from me due to COVID-19. I now have no source of income, and my family is unable to financially support me… Words cannot express how disheartening this is.” Some emerging adults become financially independent upon entering college (Arnett, 2006); thus, disruptions to employment and income may be particularly financially damaging and emotionally distressing.

Category 3: Health. Theme 5: Physical Health Consequences (6.00%). Some students reported physical consequences including headaches, weight gain, physical pain, poor sleep quality, and inverted sleep schedules. A few students linked these physical health concerns to increased screen time (0.93%). The disruption in physical health may serve as a risk factor for college students, as physical health and mental health are intertwined (Ohmberger et al., 2017). One student noted, “Cannot go to the gym which was helping in my recovery” and another noted, “I miss going to the gym and having a solid routine where I can take a break from the craziness of it all.”

Theme 6: Mental Health Consequences (25.40%). A common narrative threaded throughout participants’ responses was heightened psychological distress. Students experienced high levels of depression, anxiety, and mood disturbances. Some of these mental health concerns were quite severe (e.g., “My life is ruined.”). Another student noted, “I have lost all motivation to do anything. I lay in bed all day and when I do get up it’s late in the evening. I just don’t care about anything anymore.” In addition, COVID-19 ignited the resurgence of some previously existing disorders (e.g., eating disorders) and prompted new clinical behaviors (e.g., obsessive-compulsive behaviors). In addition to psychological disorders, students commonly reported distressing symptoms (e.g., stress, loneliness, hopelessness, and lack of energy). Our findings suggest that the mental health consequences of the pandemic represent an urgent concern.

Theme 7: Virus-Related Concerns (24.71%). Like many others, college students were impacted by the virus itself, including the ubiquitous fear and community-level stress associated with the pandemic. Though few indicated they personally tested positive (0.47%), some reported that a person close to them was diagnosed (9.09%), and many others expressed concern for loved ones (13.29%). Perhaps the most devastating challenge in this domain was for those who lost a loved one to the virus (2.80%). As one student stated, “My uncle got COVID which led to my grandma catching it. She passed away in May due to COVID and I have been hurt since then. We weren’t even able to say goodbye.”

Category 4: Interpersonal. Theme 8: Loss of Social Connection (21.68%). Many college students expressed difficulties with the transition from being surrounded by people on a crowded college campus to sudden social isolation. One student expressed, “Not being able to be in my apartment and see friends every day has been tough especially since those are the things that I rely on a lot to stay healthy mentally.” Those who moved home felt disconnected from their friends, many of whom function as “chosen family” for college students. On the other hand, those who stayed on campus were unable to see family members. There was a sense of yearning for loved ones.

Theme 9: Challenges with Family Environment (8.39%). Extremely disrupting to college students’ well-being was discord in their living environments. Participants were frustrated by family dynamics and conflicts. To some, moving home meant cohabiting with family members who were not accepting of their identities (0.93%). One student stated: “I’m also struggling being at home as I am a member of the LGBT community and my mother is not very accepting. She chooses to ignore it mostly and considers my girlfriend just a friend which is far better than other people in my position but I miss being able to watch shows and listen to music with positive LGBT content in them and being able to just be who I am and not hide.

Having to hide one’s identity is likely psychologically damaging (Newheiser & Barreto, 2014). Finally, the sheer fact of living at home introduced additional responsibilities for some students, such as taking care of younger siblings or older grandparents (1.40%). Overall, the pandemic challenged some of college students’ most defining identities and roles.

Category 5: Societal. Theme 10: Societal Concerns (5.36%). The impact of current events was strongly felt by some college students. Emerging adulthood is a period when individuals start to solidify their beliefs (e.g., political, religious), and college students in particular tend to be involved in political activism (Núñez & Flanagan, 2016). One student expressed, “I feel as if my youth is being robbed from me by the sheer incompetence of my government.” Responses like these indicate that there was some distress over the nation’s response to the pandemic (3.03%), an intense election year (in which many students could vote for the first time), acts of racial injustice, and a sense of urgency to help ameliorate these problems (2.80%).

Category 6: None. Theme 11: None (1.63%). Some, albeit few, students actively reported facing zero challenges (e.g., “none” or “none personally”).

Opportunities

Category 1: Lifestyle and Routines. Theme 1: Leisure Time (22.84%). More free time meant students could reconnect with old hobbies or take on new ones. They finally found the time to do the things they loved. One student stated, “My parents are good cooks and have encouraged me to develop hobbies like cooking, gardening/composting, knitting, writing/journaling and painting. I’m working on finding entertaining activities away from screens to distract and develop myself in ways I didn’t think I had time for.” In addition to engaging in hobbies, some students simply appreciated the ability to take control over their schedules (9.56%). By using positive strategies to cope and develop their sense of selves, students demonstrated remarkable resilience.
Category 2: Academic/Professional. Theme 2: Academic/Professional Opportunities (7.69%). Some students thrived in the online learning environment, reporting decreased academic stress. They enjoyed increased flexibility with classes, instructors being more lenient, and reduced workload (2.33%), as well as more time for schoolwork (4.20%). Contrary to the student above who noted “plummeting grades,” one student stated, “I have had more time to study and improve my grades.” It is important to determine what might lead some students to thrive and others to struggle in this domain. We consider the role of inherited identities, such as race and socioeconomic status, below.

Theme 3: Financial Opportunities (6.76%). A portion of students found themselves better off financially. As one student expressed, “Unemployment benefits have allowed me to save up some money for when I need it.” Students were also spending less money by living at home (3.03%), and some in the field of medicine or nursing foresaw increased job opportunities post-graduation (3.73%). Again, it is important to consider the differential financial impact of the pandemic, as we discuss below.

Category 3: Health. Theme 4: Physical Health Behaviors (8.39%). College students experienced more opportunities to focus on their physical health behaviors as a result of the pandemic, including exercising more frequently and adopting healthier sleeping habits (3.73%). One student stated, “I have developed a yoga routine that is helping me cope,” which highlights the ability of college students to develop and implement new coping strategies.

Theme 5: Intrapersonal Opportunities (23.31%). Importantly, the pandemic presented an opportunity for students to focus on themselves (e.g., “Time to reflect on myself and set and pursue goals”). There was a widespread appreciation among participants for the opportunity to slow down, rest, and reflect on their values. Some even saw improvements in mental health (1.63%). This sheds light on the importance of taking care of oneself for college student well-being.

Category 4: Interpersonal. Theme 6: Enhanced Social Connection (38.68%). Surprisingly, the most widespread silver lining of the COVID-19 pandemic that college students mentioned was enhanced social connectedness. Participants appreciated the opportunity to spend more time with family, friends, or romantic partners—whomever they were quarantining with—and some relationships strengthened as a result. For example, one student noted “greater depth within long-established relationships.” Participants also reported taking advantage of unique social opportunities (2.33%), such as reconnecting with old friends. Though social relationships were drastically altered for college students through campus shut-downs and relocations across the country (and world), students demonstrated the importance of social relationships during this phase of life and also their resilience in the face of a pandemic.

Theme 7: Comfort of Home (8.86%). For a variety of reasons, some students simply enjoyed being home. A few even reported a preference for being at home as opposed to on campus (e.g., “I much, much prefer taking online classes and staying at home.”). Though the pandemic is an extreme stressor, college “as usual” can be very difficult for students as well, and the environment is simply not suitable for some people.

Category 5: Societal. Theme 8: Global Perspective (3.73%). Some students reported they were gratified by opportunities to give back to their communities and help others (3.03%). A few rejoiced that the earth was healing itself in the absence of human pollution (0.70%). As one student noted, the pandemic presented an opportunity “to focus on what is really important to help the greater good.” College students exercised their activism and became a voice for change during the pandemic.

Category 6: None. Theme 9: None (11.89%). Of critical importance, several students found no opportunities or silver linings as a result of the pandemic (e.g., “None. It’s terrible.”). In fact, this was the fourth most mentioned of the nine themes under opportunities.

Open-Ended Challenges and Opportunities: Differential Responses by Social Identities

Chi-square tests of independence compared the proportions of students indicating certain COVID-19 effects by different social identities. Odds ratios were calculated using the risk estimate procedure in SPSS Version 26.

Financial, Academic/Productivity, and Virus-Related Concerns by Race/Ethnicity and Income

The frequency of noting financial concerns did not differ across racial/ethnic groups (Figure 1(a)); however, as illustrated in Figure 1(b), students from lower-income and middle-income backgrounds were almost twice as likely to mention financial concerns than were students from higher-income backgrounds. The frequency of mentioning academic/productivity concerns did not differ by racial/ethnic group (Figure 1(c)) or family income (Figure 1(d)). The frequency of mentioning virus-related concerns also did not significantly differ across racial/ethnic group (Figure 1(e)) or family income (Figure 1(f)).

Mental Health Consequences by Gender, Sexual Orientation, Race/Ethnicity, and Income. There were no significant differences in noted mental health consequences by race/ethnicity (Figure 2(a)), income (Figure 2(b)), or gender (Figure 2(c)); however, as displayed in Figure 2(d), bisexual students were three times more likely to mention mental health concerns compared to heterosexual students.

Interpersonal Effects by Gender and Sexual Orientation. There were no differences in frequency of noting loss of social connection by gender (Figure 3(a)) or sexual orientation (Figure 3(b)). However, as detailed in Figure 3(c), cisgender females were more than twice as likely to mention enhanced social connection compared to cisgender males. There were no sexual orientation
differences in mentioning enhanced social connection (Figure 3(d)). Further, frequency of noting challenges with the family environment did not differ by gender (Figure 3(e)), but compared to heterosexual students, bisexual students were more than three times as likely to mention challenges with the family environment, and students who identified as gay or lesbian were more than ten times as likely to do so (Figure 3(f)).

**Discussion**

In general, many domains of life that emerged as areas of struggle for college students also functioned as areas of opportunity. Consistent with prior literature (e.g., Cao et al., 2020; Huckins et al., 2020; Son et al., 2020), many college students reported increased psychological distress during the pandemic. Yet, some students reported improvements in mental...
health and opportunities for self-reflection, intrapersonal growth, spirituality, gratitude, and optimism. Similarly, while some students reported negative consequences to their physical health behaviors (e.g., disrupted sleep schedules, decreased exercise), others reported improvements (e.g., more sleep, more exercise). Notably, physical and mental health benefits were often tied to having increased time and resources to prioritize healthy behaviors and self-improvement, which likely served as protective coping strategies.

Notably, some students with stigmatized identities (e.g., members of the LGBTQ+ community, who are already at higher risk for mental health challenges; ACHA, 2020) experienced the loss of an accepting and affirming community on campus, and returned to a family environment that was not supportive of their identity. Prior research suggests that students who reported non-binary gender identities, compared to male-identifying students, experienced more symptoms of depression, anxiety, and PTSD related to relocating during the pandemic (Conrad et al., 2021). Similarly, in the current study, students identifying as gay or lesbian were over 10 times more likely than heterosexual students to describe challenges with the family environment, and students identifying as bisexual were more than three times as likely, reflecting a stark difference in experience for LGBTQ+ students returning home. Similarly, bisexual students were three times more likely than heterosexual students to report mental health consequences. Quantitative analyses corroborated these qualitative findings, as cisgender males and heterosexual students reported lower levels of social isolation and mental health impact than students identifying with other genders and sexual orientations. Taken together, these findings suggest that sexual and gender minorities in particular suffered from the loss of connection to their campus communities.

Academic and financial challenges often compounded mental health concerns. Students from lower- and middle-income households were more likely to discuss financial concerns than were students from higher-income households, consistent with findings suggesting that the pandemic disproportionately affects individuals from low socioeconomic backgrounds (Soria & Horgos, 2020). There may be a unique financial burden on college students who are unlikely to have a stable job or stream of income (Arnett, 2006). Overall, due to social inequalities such as
lack of access to adequate healthcare, greater levels of poverty, and inability to disclose social identities (Salerno et al., 2020), students from marginalized communities may have experienced disproportionate impacts from the pandemic.

Feelings of loneliness, isolation, and disconnect during the pandemic were also commonly expressed in student responses. Given the salient role of peer support during emerging adulthood (Lane, 2015), loss of social connection may constitute particularly strong risk for poor mental health outcomes. Cisgender females noted increased social connection in their open-ended responses, but also endorsed higher levels of social isolation compared to cisgender males on a closed-ended Likert

Figure 3. Interpersonal effects from COVID-19: Percentages of students mentioning themes by gender and sexual orientation.
scale, fitting with prior research suggesting that women may face more adverse social consequences from the pandemic (Gauthier et al., 2020). Future research should investigate these gender differences, as well as the possible mechanisms at play leading to improvements in social connection or the strengthening of relationships during the pandemic, such as prosocial behavior linked to shared hardships (von Dawans et al., 2012).

Limitations and Future Directions

There are several limitations to this study worth noting. Crucially, not finding significant differences in self-reported mental health, virus-related, and academic concerns by certain demographic characteristics (specifically race/ethnicity and parental income) does not mean that the pandemic did not disproportionately impact historically marginalized groups. Indeed, it is well-established that these disparities persist (ACHA, 2020; Aucejo et al., 2020; Cunningham et al., 2020; Gillis & Krull, 2020). This surprising finding may have occurred because our particular questions did not probe for these differences, self-report responses may not capture full impact, and/or the sample was not sufficiently diverse. Although data were collected across three larger studies with different aims, and participants were diverse in many ways, there were some social identities that were missing (e.g., transgender males) or too low in prevalence (e.g., transgender female, non-binary, or genderqueer) to include separately in analyses. Further, the sample was restricted to students from one university, limiting generalizability. Future studies should continue to assess the impact of COVID-19 across contexts and among different groups throughout the lifespan and around the world.

Additionally, all data were based on self-reported information. It is likely that various factors impacted the length and depth of participant responses, and thereby the type and number of themes mentioned. Certain students (e.g., cisgender females, bisexual individuals) reported more challenges overall compared to students of other genders and sexual orientations; differences in endorsement could reflect either true variety of experience or a difference in willingness to report. Responses to the open-ended questions may have been biased by the inclusion of specific examples of possible challenges in the text of the prompt. Further, analyses focused on whether students had mentioned a specific subtheme in their response, and did not code for the extent of the impact. Within each subtheme, there was a wide range of severity expressed by student responses, and this nuance is not captured by the analyses presented.

Notably, while 51 students reported that they experienced no opportunities as a result of the pandemic, only seven reported that they experienced no challenges. It is surprising that any students (albeit only seven) reported experiencing no challenges. This may be due to privilege, a high level of resilience and effective coping, or both (Duran, 2019; Smith & Judd, 2020). Future research should further examine which factors (e.g., demographic features, mental health, or resilience) predict who is more or less likely to experience different types of challenges in response to the pandemic. Although the current study offers some insight into these differences (specifically, sexual and gender minority students experiencing higher levels of social isolation and perceived mental health impact), further research is needed on predictive relationships between pre-pandemic characteristics and outcomes to explore risk and resilience factors for differential response to the pandemic.

Contributions and Implications

Collecting qualitative data and utilizing thematic analysis allowed us to uncover and explore experiences that would likely not be revealed in a purely quantitative investigation. Utilizing open-ended text responses provided anonymity and allowed participants to say as much or as little as they wished. Additionally, qualitative findings (e.g., gay, lesbian, and bisexual students describing more challenges with the family environment) complemented the quantitative findings (e.g., heterosexual students reporting less isolation than bisexual students) in ways that this mixed methods design was uniquely able to capture.

The current study offers important contributions to the emerging literature on the impact of the COVID-19 pandemic on college students. Although understandably, the majority of this literature has focused on challenges (e.g., Wang et al., 2020), and some has explored coping strategies used by students (e.g., Son et al., 2020), this is one of the early studies that specifically explores silver linings that emerged as a result of the pandemic for college students, as well as differences by social identities. It also expands on prior literature in this area with limited samples (e.g., primarily engineering majors; Son et al., 2020) by including a wider cross-section of students from numerous majors. This approach is necessary because it provides a more complete, nuanced understanding of the varied ways that college students have experienced and responded to the pandemic, helping universities to more effectively meet the needs of their students during and after the pandemic.

The findings presented here have important policy implications for universities, which we suggest for consideration by faculty and administrators. First, while many students struggle in an online learning environment, others have benefitted from the increased flexibility and thrived academically. Universities that did not previously offer virtual learning experiences should consider continuing these opportunities after the pandemic subsides to provide optimal learning environments for all students, while carefully tailoring instruction to those with disabilities or physical health conditions that require additional accommodations (ACHA, 2020). Further, increased mental health concerns, particularly in historically marginalized groups, underscore the importance of ongoing efforts to reduce barriers to treatment. Widespread implementation of teletherapy has addressed certain treatment gaps and students might benefit from continued telehealth options provided by university counseling centers post-pandemic. Further, universities could
be proactive and implement mental health screening and treatment resources throughout university departments, rather than relying on a more passive approach that requires students to present themselves if in need (Eisenberg et al., 2012). The differential impact on mental health, social isolation, and experiences in the home environment for different social identity groups also emphasizes the importance of providing virtual and on-campus communities for specific populations, particularly sexual and gender minorities.

Finally, many of the opportunities identified by students were contingent upon gaining more time to engage in healthy behaviors (e.g., exercise, self-reflection, and pleasurable hobbies), demonstrating that college students would likely experience fewer physical and mental health difficulties if provided with sufficient resources (especially time) to engage in these critical behaviors. Universities might prioritize providing time for students to engage in protective, healthy behaviors after the pandemic subsides. In addition to continued virtual learning options, more emphasis on learning experiences and less emphasis on exams and “busy work” would reduce required time spent studying outside of the classroom. Research with adolescents suggests that assigning large amounts of homework increases inequality in achievement between students and only benefits those who are already doing well academically (Fernández-Alonso et al., 2017). Changes implemented on both the university level and on the classroom level would allow students the flexibility to tailor their college experience to meet their own needs. For example, universities might consider lowering the number of credits that students are expected to enroll in each semester, thus allowing for a more flexible timeline and reducing the pressure to graduate within four years. This would be especially advantageous for students who need to work throughout college to support themselves, students who need to care for family members, or students who have children of their own. At the classroom level, instructors could offer flexibility through asynchronous and synchronous learning options (Gillis & Krull, 2020), and emphasize applied learning over time spent studying for exams and completing homework assignments. As evidenced in the current study, when students had fewer commitments, minimal commuting, and more time to engage in self-care, they found opportunities to thrive physically, emotionally, and spiritually in the face of the more obvious challenges of the COVID-19 pandemic. In addition to revealing the remarkable resilience of this population, this study highlights the critical importance of providing college students with the time and resources to engage in protective physical and mental health behaviors.

Transparency and Openness Statement

The raw data contained in this manuscript are not openly available due to privacy restrictions set forth by the institutional ethics board, but can be obtained from the corresponding author following the completion of a privacy and fair use agreement. The analysis code/syntax and coding manuals used in this study are not openly available but are available upon request to the corresponding author. The list of questions and materials are listed within the text. No aspects of the study were pre-registered.

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