



## Thematic analysis of COVID-19's impacts on transitions among emerging adults

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### ABSTRACT

**Objectives:** This study explored how the COVID-19 pandemic impacted emerging adults. Previous COVID-19 research with this age demographic has focused on specific facets of life transitions (e.g., academic or economic stress) but does not consider the interrelatedness of these life domains. This project fills this gap by allowing participants to report on any aspects of their life to better understand frequent challenges with and experiences that may have helped with managing “the new normal” of the COVID-19 pandemic amidst typical transitions of emerging adulthood.

**Methods:** Qualitative and quantitative data gathered in July 2020 ( $n = 145$ ) and January 2021 ( $n = 143$ ) as part of a longitudinal study of emerging adults (18–24 years) who were enrolled at a Midwestern United States University at baseline were analyzed to explore impacts of COVID-19, particularly in relation to stress.

**Results:** Qualitative results demonstrate a range of negative COVID-19 effects, including health challenges and relationship strain. Interestingly, positive effects were also reported, including allocating more time for hobbies and spending quality time with loved ones. Quantitative findings indicate that COVID-19 distress did not increase over time, but perceived exposure to pandemic effects significantly increased. A general perceived distress measure demonstrated a slight decrease in distress over time, suggesting a potential adjustment to ‘the new normal.’

**Discussion:** COVID-19 impacted multiple domains of typical developmental transitions for many emerging adults in our sample. Individual qualitative reports demonstrate uniquely personal impacts of COVID-19, while thematic trends appear across responses (e.g., relationship strain). Health care providers must consider how these impacts influence the wellbeing of emerging adults with whom they work as the pandemic continues to evolve.

### 1. Introduction

Emerging adulthood, the developmental period which occurs between 18 and 25 years, is one of significant life changes and transitions.<sup>1</sup> Available evidence demonstrates that mental health challenges in emerging adults have been increasing over recent decades, including anxiety, depression, and suicidal ideation.<sup>2</sup> The COVID-19 pandemic has presented a new stressor globally.<sup>3–5</sup> Emerging adults enrolled in higher education often report acute and chronic stress related to academics, post-graduation plans, and relationships.<sup>6,7</sup> College students also endorse life transitions as being stressors, such as those across their relationships, sleep and eating patterns, and living situations.<sup>8</sup> There is

concern that emerging adults, especially those in higher education, have experienced unique COVID-19-related impacts on this developmental stage given the transitions and stressors at this phase of life. For health care providers working with this population, it is crucial to gain a better understanding of how the pandemic has impacted this transitional life period.

#### 1.1. Emerging adulthood in the context of COVID-19

Beginning with initial lockdown, emerging adults in Italy ( $M_{age}=24.18$ , range 18–29) experienced significant anxiety and stress in relation to COVID-19.<sup>4</sup> Compared to individuals not enrolled in a higher

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education institution, French university students ( $M_{age}=23.3$ ) were at a higher risk for symptoms of anxiety, depression, and stress within the context of COVID-19.<sup>3</sup> University students may have had unique vulnerabilities to the impacts of the pandemic, such as more frequently having to alter their living situation during lockdown.<sup>3</sup>

Following the onset of the pandemic, university students across the United States reported experiencing significant stress,<sup>5,9,10</sup> anxiety, and depression<sup>11</sup> (undergraduates<sup>5</sup>; First year students<sup>9</sup>; 18–22 years<sup>10</sup>;  $M_{age}=20.9$ , range 18–29<sup>11</sup>) In longitudinal samples of United States undergraduates, stress was significantly higher in April and May 2020 compared to data gathered prior to the first wave of United States based COVID-19 cases,<sup>5,9</sup> highlighting the effect of this global event on functioning.

Additionally, students perceived their stress as being related to changes in routine, lack of social contact, and financial concerns as a result of the pandemic.<sup>11</sup> Educationally, remote learning experiences of undergraduates were variable. While some students in the United States reported that learning from home was beneficial,<sup>25</sup> there also were a number of challenges including fulfilling academic responsibilities, internet connectivity, diminished concentration and achievement, and class materials not designed for online learning.<sup>11,12</sup> Individual level responses to the pandemic have also demonstrated differences in these psychological impacts. In particular, for both those who perceived they had more knowledge about COVID-19 and for those with more worries related to the virus, pandemic-related anxiety and stress were significantly higher.<sup>4</sup> Data from the American Psychological Association from 2022 suggests that emerging adults (18–25) frequently experience money-related stress, and that most (82%) see it as a significant source of stress.<sup>13</sup> Economic- and housing-related stress was also endorsed by 62% and 58% of this sample, respectively.

In response to these various stressors, individuals typically draw upon a number of different coping resources to manage stress. However, opportunities for coping were also disrupted by the COVID-19 pandemic. For example, many college students exercise to cope with stress; however at the height of the pandemic, gym access was frequently limited if not unavailable to students globally.<sup>14–16</sup> Compounding this issue, opportunities for in-person social support were limited during quarantine and, in turn, social media use was reported as having increased in a European sample.<sup>14</sup> As screen time increased, physical activity decreased in Jordan and China,<sup>15,16</sup> together reflecting the complex alterations in coping resources.

### 1.2. Gaps in the literature and need for research

Given increased stress and worsened mental health,<sup>3,4</sup> and that stressful transitions are typical for emerging adults,<sup>6–8</sup> it is crucial to address various ways that the COVID pandemic impacted the well-being of this population. Current literature largely emphasizes specific domains of disruptions or impacts of the pandemic, such as relationships,<sup>17</sup> distress,<sup>18</sup> and financial uncertainty.<sup>19</sup> Moreover, while the previously mentioned studies suggest the disruptions of the pandemic were rapid and far reaching, they are limited by focusing on one domain of functioning, like education or relationships. Consequently, health care providers supporting this population need to consider which of these domains are impacting the well-being of those they care for and to what extent they may be impacted. However, these domains are inherently related and cannot be understood in isolation. Qualitative studies provide unique insight into such intersecting impacts, such as asking participants to broadly reflect on negative experiences with the pandemic in paragraph form.<sup>18</sup> Analyses of singular domains of functioning commonly assessed for emerging adults (e.g., physical, psychosocial, educational, and occupational) yield limited opportunity to address the interconnectedness of life domains within the context of the pandemic, thus the data cannot be used to direct intersectional health care. Therefore, our study aimed to improve our understanding of emerging adults' experiences with COVID-19 by providing them the opportunity

to qualitatively share any topics that were relevant to their experience, rather than assessing one aspect of functioning in isolation. Qualitative responses are then contextualized and better understood amidst the context of quantitative measures assessing stress.

### 1.3. Study aims

Two primary aims guided this study. Aim one included improving understanding of the effects of COVID-19 on emerging adults and their families through open-ended responses. Aim two utilized responses to quantitative measures to explore initial adjustments to the pandemic by comparing two time points from the beginning stages of the COVID-19 pandemic (July 2020) and six months later (January 2021). Quantitatively, we hypothesized that both general stress and COVID-19-related stress would increase across time points.

## 2. Methods

### 2.1. Participants and procedures

Participants (Baseline;  $N = 265$ ) were initially recruited in 2017 and 2018 while enrolled as undergraduate students at a large, urban, private university in the Midwestern United States to complete a 2-week study of daily stressors and daily hassles. Participants were eligible for inclusion at baseline if they were currently enrolled at the university and were between the ages of 18 and 24, could read and write in English, had a personal cellular device with an unlimited text messaging plan to respond to text message prompts, and were willing and able to provide consent. Due to the focus on health behaviors in the parent study, varsity athletes were excluded due to the likelihood that they engaged in significantly more regular exercise compared to non-varsity athletes. Baseline participants were re-contacted about participating in a follow-up study in January 2020. Follow-up included completion of online questionnaires during January 2020, July 2020, and January 2021. Only the latter two time points were used in the current analysis (T1 = July 2020,  $n = 145$ ; T2 = January 2021,  $n = 143$ ). A Qualtrics follow-up survey was shared via email with all baseline participants to provide consent and volunteer to complete measures. Participants were compensated with a \$15 gift card for completing surveys at T1 and \$20 gift card for T2. One hundred and six participants volunteered to complete measures at both T1 and T2, 29 participated at only T1, and 26 participated at only T2 follow up.

### 2.2. Measures

#### 2.2.1. Perceived stress scale

Stress over the previous month was measured utilizing the Perceived Stress Scale (PSS).<sup>20,21</sup> All 10 questions on the PSS were rated on a five-point Likert-type scale (0 = Never; 4 = Very Often). Items included questions such as “how often have you been upset because of something that happened unexpectedly” and “how often have you found that you could not cope with all the things that you had to do?” Summed scores of items range from 0 to 40, with higher scores representing more frequent distress. Reliability and validity of the PSS have been found to be acceptable across a variety of populations, including university students, and consistently has a Cronbach's Alpha greater than 0.7.<sup>22</sup> Cronbach's Alphas in our sample were acceptable (T1 = 0.82; T2 = 0.68).

2.2.2. CEFIS-AYA. The COVID-19 Exposure and Family Impact Survey-Adolescent and Young Adult version (CEFIS-AYA) assessed impacts of, exposure to, and distress related to the pandemic.<sup>23</sup> Exposure was assessed on the CEFIS-AYA via answering 28 yes/no items such as “I had a “stay at home” order” and “I/we self-quarantined due to travel or possible exposure.” The number of yes responses were summed to create a total exposure score that ranges from 0 to 28, with higher scores

demonstrating more exposure. Impact was assessed across 15 items, each rated on a four-point Likert-type scale (1 = Made it a lot better; 2 = Made it a little better; 3 = Made it a little worse; 4 = Made it a lot worse) or by selecting a “Not Applicable” option. Impact questions asked, “In general, how has the COVID-19 pandemic affected each of the following?” with items asking about topics such as parenting, interpersonal relationships, and well-being. Mean impact scores range from 1 to 4, with mean scores greater than 2.5 demonstrating a trend toward COVID-19 making things worse and less than 2.5 demonstrating a trend toward making things better. One item was utilized to assess COVID-19-related distress by asking participants to rate COVID-19-related distress on a 10-point scale (1 = No Distress; 10 = Extreme Distress). While the distress item was originally designed to contribute to the impact score, our statistics follow new recommendations that it be assessed independently given its use of a different scale than all other impact measures.<sup>23</sup> Ordinal alphas for the CEFIS Exposure subscale were good (T1 = 0.85) and excellent (T2 = 0.91) and Kruder-Richardson Formula 20 s for the Impact subscale were acceptable (T1 = 0.75; T2 = 0.72).

The CEFIS-AYA was also utilized to gather qualitative data. An open-ended question on the measure asks participants “Please tell us about other effects of COVID-19 on you and your family, both negative and/or positive.”

### 2.3. Analyses

Three authors (K.B., H.B., and N.G.) conducted qualitative analysis of the CEFIS-AYA open-ended prompt by following a framework provided by Braun and Clarke<sup>24</sup> to conduct inductive, semantic thematic analysis. Responses were blinded for participant and time point. Reviewers began by independently noting frequently referenced themes. Then, reviewers compared independently curated themes together and worked to create an initial set of themes, sub-themes, and codes that would be utilized to summarize frequently reported impacts of COVID-19. Themes included broad concepts such as health and relationships, while sub-themes and codes provided more nuanced summaries of participant reports by identifying recurrent topics (sub-themes) within a theme and more specific topics (codes). This approach was used to allow for both breadth and depth in our ability to summarize participants’ reports. After a set of themes, sub-themes, and sub-sub-themes were agreed upon, responses were examined again, and reviewers independently assigned themes and sub-themes to responses, with multiple themes and sub-themes being able to be applied to each response. After independently applying themes, sub-themes, and codes, the review team met to discuss any discrepancies and reach a consensus for each response. Themes and sub-themes that were frequently reported in tandem were reviewed to determine if they represented the same construct and should then be combined. Combining themes or sub-themes involved collapsing responses that were assigned both or either initial theme or sub-theme into a newly derived theme or sub-themes. This process was repeated until reviewers reached agreement on the final list of themes and sub-themes (8 themes, 22 sub-themes, 18 codes) and concordance on how each participant response should be coded. Blank responses and those that stated items such as “Nothing,” “None,” and “I don’t know” were not coded. A final list of sub-themes, codes, and examples is available in Table 1.

Paired samples t-tests were conducted to examine the differences between PSS total scores, CEFIS-AYA mean impact scores, total exposure scores, and COVID distress scores between T1 and T2.

## 3. Results

Participants were predominantly white non-Hispanic females (see Table 2). There were no differences between the larger sample that initially participated and those that participated in 2020–2021 with respect to sex ( $p = 0.55$ ), gender ( $p = 0.42$ ), race ( $p = 0.31$ ), and

ethnicity ( $p = 0.17$ ). At T1, 74 participants were still undergrads, 59 had graduated, 1 had dropped out, and 11 were in graduate school. Forty-five worked full time, 53 worked part time, and 47 were unemployed. At T2, 61 participants were still undergrads, 64 had graduated, 4 had dropped out, and 14 were in graduate school. Fifty-seven worked full time, 52 worked part time, and 34 were unemployed. Participants who only participated in the initial study were significantly older than those who followed up and were included in this analysis (baseline only  $M = 19.93$ ,  $SD = 1.61$ , followed up  $M = 19.40$ ,  $SD = 1.25$ ,  $t(263) = 3.04$ ,  $p = .003$ ). Other study measures (PSS and CEFIS-AYA) were not collected at baseline.

### 3.1. Aim 1: understanding the effects of COVID-19 via qualitative analysis

Participants across T1 and T2 ( $N = 288$ ) responded in one of three ways to the open-ended question “Please tell us about other effects of COVID-19 on you and your family, both negative and/or positive.” One hundred sixty-four respondents left their response empty (48.26%,  $n = 139$ ) or stated items such as “none” or “N/A” (8.68%,  $n = 25$ ). Some respondents (1.73%,  $n = 5$ ) provided vague responses or responses that could not be interpreted for themes, for example “I don’t really want to. I’m tired of thinking of it” and “positive.” Finally, 41.67% ( $n = 119$ ) of participants provided interpretable and clear responses that were included in the thematic analysis, which yielded 8 primary themes, 22 sub-themes, and 18 codes (Table 1). During the coding process, a number of respondents noted both positive and negative impacts; a sub-theme called *Duality* was thus utilized to represent this type of balanced thinking with responses such as, “Gained weight negative but got to sleep more positive” and “Negative: Virtual learning makes school a lot harder and my hours were cut when I was working full time. Positive: I do get to see my family more since I am home more than usual.” *Duality* was reported in 22.7% ( $n = 27$ ) of responses.

#### 3.1.1. Most frequent theme: relationships

*Relationships* was the most frequently endorsed theme across the full sample of responses (65.55%,  $n = 78$ ) with responses such as “Brought the family a lot closer” and “I wasn’t able to see my brother and sister (and nieces and nephew) for months and could not see my niece when she was in the hospital.” Within this theme, the sub-theme of *Social Isolation/Distance* was reported most frequently (23.53%,  $n = 28$ ), followed by *Cohesion* and *Tension*, which were both reported by 16.81% ( $n = 20$ ) of respondents, respectively. These sub-themes represented feelings of social connection (*Cohesion*), social detachment related to physical or emotional separation (*Isolation/Distance*), and strain or termination (*Tension*). A final sub-theme of *Change* was included in the *Relationships* theme, which included answers that did not clearly fall into one of the other sub-themes but explicitly referenced the impact of COVID-19 on their relationships. For example, the response “Everyone was at home together for the first time in a long time” included a relational component given the reference to the participant’s family members being home, however insufficient information was available to infer if this resulted in social cohesion or tension. Additionally, each sub-theme was subdivided into codes for *Family*, *Social*, and *Generic*. Some answers were vaguely describing a change in relationships (*Generic*; e.g., “Our relationship is closer, but more fragile”); whereas others specifically mentioned family (*Family*; e.g., “.not seeing grandparents as much”) or non-family (*Social*; e.g., “COVID has tested my relationship with my partner”) relationships.

#### 3.1.2. Second most frequent themes: health and job/work

*Health and Job/Work* were the next most frequently reported themes, each being mentioned by 46.22% ( $n = 55$ ) of participants.

*Health* responses included: “it caused my paranoia, eating disorder, depression and anxiety to reach an all-time high” and “The stress triggered an autoimmune disorder I have and I’m losing hair...” Within this

**Table 1**  
Themes, sub-themes, and code details.

Theme (n)	Sub-themes (n; definition)	Codes (n)	Example Quote	July 2020 n	January 2021 n	
<b>Relationships (78)</b>	<b>Cohesion</b> (20; Brought us closer, talked more, spend more time together, etc*)	<b>Family</b> (11)	"It brought my immediate family closer together"	2	9	
		<b>Social</b> (4)	"spent more time with my significant other's family because both of us became unemployed"	2	2	
		<b>Generic</b> (5)	"more time spent together"	3	2	
		<b>Family</b> (18)	"I wasn't able to see my brother and sister (and nieces and nephew) for months and could not see my niece when she was in the hospital"	7	11	
		<b>Social</b> (8)	"Not being able to see my friends and not being able to end the year with them made me really sad. Especially since I'm in a sorority and we have a lot of events planned that had to be canceled."	3	5	
		<b>Generic</b> (2)	"Lost many clients at work and had to distance myself from others"	1	1	
	<b>Isolation/Distance</b> (28; Separation, homesickness, long distance relationships, physically living in different places, virtual communication and technology*)	<b>Changes</b> (10; Generic includes new social rules, Social adjustment or change that is not better described as isolation/distance or cohesion and is not an increase in tension with other social parties*)	<b>Family</b> (7)	"Family got split up"	4	3
			<b>Social</b> (2)	"I'm able to see my family about two to three times a month and see my boyfriend once a month."	1	1
			<b>Generic</b> (1)	"Created stress in regards to when we can and can't meet with each other"	1	0
		<b>Tension/Conflict/Break-up</b> (20; Fighting, frustration with one another, ending relationships*)	<b>Family</b> (11)	"I had to move back with my parents. My dad and I have a bad relationship. We are constantly fighting over things"	5	6
			<b>Social</b> (4)	"We've been able to spend a lot of time together, but it's also allowed us to see the ugly side of each other. Furthermore, COVID has tested my relationship with my partner/challenged us greatly. I still am dealing with it right now."	1	3
			<b>Generic</b> (5)	"Our relationship is closer, but more fragile"	3	2
<b>Milestones canceled/delayed</b> (14; Weddings, graduations, birthday celebrations, etc)			"I missed my graduation and lost my job and couldn't go to a networking event that was supposed to jumpstart my career"	11	3	
			"Negative: Virtual learning makes school a lot harder and my hours were cut when I was working full time. Positive: I do get to see my family more since I am home more than usual"	1	3	
			"COVID-19 switched everything to online learning, which in turn decreased my ability to fully digest course material. Caused more stress from academics"	2	0	
<b>Education</b> (16)	<b>Difficulty Online Learning</b> (4; References to online learning which mention- general challenges with online learning, digesting material, self-discipline, screen fatigue) <b>Academic Stress</b> (2; Stress specifically mentioned in relation to academic functioning; challenges with learning) <b>Physical Change</b> (6; switch to online learning; travel abroad disruptions) <b>General Disruption</b> (3; General changes in school related to COVID)		"school went to virtual; more self-discipline to stay on top of things"	2	6	
			"health effects, not being able to focus on school, my ex broke up with me kicked me out of my place"	1	2	
			"I can't see my friends, I'm not making any new relationships. I feel stuck. I feel less inclined to be focused during online classes. My future job prospects seem worse, but also maybe better since I won't have to go in for a physical interview"	3	2	
<b>Health</b> (55)	<b>Psychological Health</b> (32)	Hopeless, loss, stuck (5; References to feelings similar to hopelessness, feeling lost, or feeling stuck)	"Increase of anxiety, risking exposure to covid for work, lack of work, stress increase"	6	4	
			"it caused my paranoia, eating disorder, depression and anxiety to reach an all time high"	8	9	
		Stress (10; includes general stress/worry or specific worry; increase or reduction) Mental health changes (17; previous conditions impacted, new symptoms/concerns) <b>Physical Health Change</b> (10; non-COVID)	Health Symptoms/Changes (2; Physical health change, symptoms worsening, new diagnoses; changes in treatment)	"The stress triggered an auto immune disorder I have and I'm losing hair. My sister missed her HS graduation and prom, and I missed my college graduation. I got a full time job working remotely that pays extraordinarily well"	0	2

(continued on next page)

Table 1 (continued)

Theme (n)	Sub-themes (n; definition)	Codes (n)	Example Quote	July 2020 n	January 2021 n
		Behavioral change(s) (5; sleeping, eating, etc)	"More time to sleep, jobs are more flexible, being able to have my sister over bc of remote learning"	2	3
		General (3; Weight gain, general health effects)	"Gained weight negative but got to sleep more positive"	1	2
	<b>COVID (Diagnosis) (6)</b>		"My parents both got Covid because one of his teammates lied about having it and my dad brought it home"	2	4
	<b>High-Risk (7; Need to say they or someone in their life is high-risk or has previous diagnoses)</b>		"There's added family tension because a relative had COVID and exposed my elderly grandfather to it and he contracted the virus. My parents have had to travel out of state for extended period of time to care for grandfather."	3	4
<b>Job/Work (55)</b>	<b>Experienced Job Insecurity (22; lost job, hard to find a job, unemployment)</b>		"It just made it harder to find a job"	12	10
	<b>Fear of Insecurity (8; worry about employment status, worry about finding work)</b>		"My graduation was canceled, lost my job, had a post-grad job offer rescinded, am anxious about trying to get a job in this economy and my great aunt died. It hasn't been pleasant to say the least"	6	2
	<b>Job Change (14; Position change, switch to remote work)</b>		"My normal job I am not needed during this time, but I got another job in the meantime"	5	9
	<b>Overworked (3; No breaks; feeling burnt out; increased workload)</b>		"more work and stress"	1	2
	<b>Exposure at Work (8; high-risk of exposure at work, Essential employee/ frontline worker status)</b>		"Felt unsafe at in-person job (too many possible exposures), had to quit for health safety. Hard time finding another job"	4	4
<b>Universal Impact/ Global Impairment/ Reaction to COVID Restrictions (11)</b>			"Collectively covid-19 has caused a burden on our lives in all aspects"	7	4
<b>Economic Impacts (13)</b>	<b>Financial Stress (10; Diminished/lost income; general stress/burden related to finances)</b>		"Concerned about our source of income."	7	3
	<b>Financial Gain (3; Hazard pay/overtime; changing to a job where income was increased)</b>		"My parents made more money because they had to keep working and received hazard pay. My dad tested positive for COVID-19 but recovered"	0	3
<b>Lifestyle Change (22)</b>	<b>Screen Time (4; Working more, virtually with friends more)</b>		"Negative: not able to see family; positive: spent more time of FaceTime which led to having a better relationship with my parents"	0	4
	<b>Slow Down (5; More time for rest, hobbies)</b>		"I experienced a reduction in stress as a result of being forced to step back from my exceedingly busy lifestyle."	2	3
	<b>Housing/Living Situation Change (13; Moving home with family, moving to a new place, etc)</b>		"moving back home"	8	5

Note. All n values are stated in parentheses immediately following theme, sub-theme, and code name. \* indicates assumption that mention of home related to participant family relationship(s).

theme, sub-themes included *Psychological Health* (26.89%, n = 32) and *Physical Health* (8.40%, n = 1). Sub-themes within the *Psychological Health* theme included *Mental Health Challenges*, *Stress*, and *Hopeless/Lost*. *Mental Health Challenges* was endorsed by 14.29% (n = 17) of participants and included responses that focused on new mental health conditions or mental health conditions that had been impacted by the pandemic. *Stress* was endorsed by 8.40% (n = 10) of participants and represented responses that directly referenced the word 'stress' or 'worry'. *Stress* was coded separately from *Mental Health Challenges* given the nature in which both were referenced; *Stress* sub-theme included responses which referred to stress, or similar but non-diagnostic terms for stress, as a broad physical or psychological experience, such as "judgment [sic] on what everyone is doing how strongly they are adhering, causes stress," as where *Mental Health Challenges* included responses which referred to more specific psychological diagnoses, such as "my mom's anxiety went up." *Hopeless/Lost* was reported by 4.20% (n = 5) of participants and included responses that emphasized feeling

hopeless, lost, or stuck such as "Things have looked pretty hopeless."

*Job/Work* responses included: "Concerned about our source of income" and "My mom lost her job. I lost my job." Within this theme, *Experienced Job Insecurity* was the most frequently reported sub-theme (18.49%, n = 22), followed by *Job Change* (11.76%, n = 14). *Experienced Job Insecurity* included responses that referenced specifically losing employment, experiencing unemployment, or having difficulty finding employment. *Job Change* referenced a change in employment in terms of the position or field of employment, electing to terminate at a job, and changing to remote work. Both *Experienced Job Insecurity* and *Job Change* could be coded for one response, for example, one participant shared "My normal job I am not needed during this time, but I got another job in the meantime." Additional sub-themes for the theme of *Job/Work* included *Fear of Insecurity* (6.72%, n = 8), *Exposure at Work* (6.72%, n = 8), and *Overworked* (2.52% n = 3).

**Table 2**  
Demographic characteristics.

		Baseline N = 265	July 2020 N = 135	January 2021 N = 130	Differences
Age	M (SD)	19.61 (1.42)	21.73 (1.41)	22.44 (1.41)	$p = .003$
Sex	Male $n$ (%)	76 (29)	38 (28.1)	33 (25.4)	$p = .55$
	Female $n$ (%)	189 (71)	97 (71.9)	97 (74.6)	
Gender	Male $n$ (%)	76 (29)	38 (28.1)	34 (26.2)	$p = .42$
	Female $n$ (%)	183 (69)	94 (69.6)	94 (72.3)	
	Gender non-conforming $n$ (%)	3 (1.1)	2 (1.5)	1 (0.8)	
	Gender queer $n$ (%)	2 (0.8)	1 (0.7)	1 (0.8)	
Race	White $n$ (%)	141 (53)	76 (56.3)	76 (58.5)	$p = .31$
	Black or African American $n$ (%)	17 (6.4)	10 (7.4)	7 (5.4)	
	American Indian/Alaska Native $n$ (%)	1 (0.4)	1 (0.7)	1 (0.8)	
	Asian or Asian American $n$ (%)	60 (22.6)	29 (21.5)	28 (21.5)	
	Native Hawaiian/Pacific Islander $n$ (%)	1 (0.4)	1 (0.7)	1 (0.8)	
	Other $n$ (%)	45 (17.0)	18 (13.3)	17 (13.1)	
Ethnicity	Hispanic $n$ (%)	62 (23.4)	29 (21.5)	22 (16.8)	$p = .17$
	Non-Hispanic $n$ (%)	203 (77%)	106 (78.5)	108 (83.1)	

Note \*Differences in demographic characteristics between those that participated at baseline only and those who have a follow-up data point. An independent samples t-test was estimated for age, chi square was estimated for sex, gender identity, race, and ethnicity.

### 3.1.3. Additional themes of interest

Additional themes that were noted included *Lifestyle Change* (18.49%,  $n = 22$ ), *Education* (13.45%,  $n = 16$ ), and *Milestones Canceled/Delayed* (11.76%,  $n = 14$ ). *Lifestyle Change* encapsulated responses that emphasized the changes in day-to-day life experienced by this population following the onset of the pandemic. Sub-themes within the theme of *Lifestyle Change* included *Housing/Living Situation Change* (10.92%,  $n = 13$ ), *Slow Down* (4.20%,  $n = 5$ ), and *Screen Time* (3.36%,  $n = 4$ ). *Housing/Living Situation Change* is exemplified by the response, "I was forced to live at home. I hated it," while *Screen Time* included responses such as "Too much screen fatigue with online school and full-time work from home." *Slow Down* included responses like "It has been nice to slow down, although the circumstances are horrible," which also demonstrates the duality between the positives and negatives of the pandemic for some of our sample.

### 3.2. Aim 2: understanding pandemic adjustment with qualitative and quantitative analyses

Generally, themes were reported at similar frequencies across the sample at T1 and T2. *Milestones Canceled/Delayed* decreased with 18.64% (11 of 59 participants) at T1 and 5% (3 of 60 participants) at T2, respectively. *Universal Impact* also decreased, with 11.86% (7 of 59 participants) at T1 and 6.67% (4 of 60 participants) at T2. *Health* saw an increase from 42.37% (25 of 59 participants) at T1 to 50.00% (30 of 60 participants) at T2. *Education* also increased, with 10.17% (6 of 59 of participants) at T1 and 15% (9 of 60 of participants) at T2.

Examination of the quantitative measures of stress shows fluctuations in the sources of stress over the study period. Overall, PSS scores were higher at T1 compared to T2 (T1  $M = 21.45$ ,  $SD = 6.71$ ; T2  $M = 20.22$ ,  $SD = 7.24$ ;  $n = 99$ ,  $t(98) = 2.19$ ,  $p = .031$ ). Distress related to COVID remained consistent from T1 to T2 (T1  $M = 5.79$ ,  $SD = 1.94$ ; T2  $M = 5.98$ ,  $SD = 1.81$ ;  $n = 102$ ,  $t(101) = -0.84$ ,  $p = .40$ ), as did Impact of COVID ( $n = 100$ ,  $t(99) = -1.926$ ,  $p = .057$ ; T1  $M = 2.849$ ,  $SD = .5604$ ; T2  $M = 2.953$ ,  $SD = .612$ ). Exposure to COVID significantly increased at T2 (T1  $M = 8.89$ ,  $SD = 3.76$ ; T2  $M = 9.91$ ,  $SD = 3.96$ ;  $n = 106$ ,  $t(105) = -2.84$ ,  $p = .005$ ).

## 4. Discussion

This study aimed to improve understanding of the effects of the COVID-19 pandemic on emerging adults. Individuals initially enrolled in a longitudinal study at a Midwestern United States university in 2017 and 2018 were re-contacted for follow-up after the onset of the COVID pandemic (July 2020 and January 2021). Qualitative responses to an

open-ended question about the impacts of COVID-19 were analyzed and contextualized with quantitative measures of stress.

Results demonstrate a wide range of impacts from COVID-19, including numerous negative effects of the pandemic as well as positive impacts. Responses frequently related to transitions in relationships, health, and employment. Quantitative data suggest that over time participants experienced more exposure to COVID-19-related effects; however, COVID-19-related distress did not change over time. Interestingly, general perceived distress unrelated to COVID-19 decreased slightly over time. Results provide insight into how emerging adults perceived and adapted to their 'new normal.'

### 4.1. Qualitative findings

Thematic analysis of qualitative responses demonstrated COVID-19 frequently impacted *Relationships*, *Health*, and *Work/Job*. While it was hypothesized that a variety of negative impacts would be reported, authors were surprised to discover that nearly a quarter of the sample referred to both positive and negative impacts. A variety of reasons for this have been considered. First, the study sample was individuals enrolled at a private university at baseline. While relatively diverse in terms of race and ethnicity, our sample's access to private higher education may be reflective of higher socioeconomic status (SES), which could explain experiencing both positive and negative impacts of the pandemic. Second, the question's wording asked for both positive and negative impacts. Third, it is possible that the duality of many responses may represent a combination of optimism and utilization of coping skills which assisted participants in navigating this.

Major themes present in this sample are similar to those reported in Halliburton and colleagues,<sup>11</sup> who report themes such as *Lack of Social Contact*, *Illness*, *General Stress*, and *Mental Health Concerns* in a sample of students asked about what they wanted their university to know about their COVID-19 experience. While our question did not pull specifically for university related needs, we observed similar thematic results including relationship challenges, similar to the *Lack of Social Contact* theme, and both physical and mental health related impacts, similar to the *Illness*, *General Stress*, and *Mental Health Concerns* themes.<sup>11</sup>

#### 4.1.1. Relationships

Nearly two thirds of our sample referenced impacts of the COVID-19 pandemic on relationships. While these breakups, changes in time with family, and distance from loved ones were reported as effects of COVID-19, they are not entirely unique from pre-pandemic experiences of emerging adults.<sup>6-8</sup> Further, our data are similar to other emerging adult samples gathered at similar time points. Approximately two-thirds of a

sample of undergraduate students enrolled in a United States based study shared that the pandemic had impacted their relationships in some way.<sup>17</sup> Specific topics addressed within the Dotson and colleagues<sup>17</sup> study responses shared significant overlap with our study, with relationship strain, conflict and tension, and disconnection all being prevalent across familial, friend, and peer relationships.

#### 4.1.2. Health

Health effects were also widely reported, with just under half of participants referencing it in their response. Concerns related to health appear to be unique to the pandemic rather than relationship factors. Aside from specifically being diagnosed with or being considered high risk for infection or outcome of infection of COVID-19, participants also reported physical and psychological impacts. The range of health-related responses appears to reflect the diverse impacts of the pandemic as well as the duality of life within this context. For example, one participant disclosed weight gain, which they shared was a negative impact, alongside increased sleep, which they shared was a positive impact. Previous quantitative research has highlighted the negative impact of lockdown on the well-being of emerging adults enrolled in college.<sup>3</sup> Concern for others, such as family members, has similarly been noted in previous studies as being more prevalent in emerging adults than other age groups and that they experienced more worry related to the pandemic.<sup>4</sup> This concern may partially explain some of our sample's reported psychological impacts.

#### 4.1.3. Occupational

Occupational impacts, coded within the *Work/Job* theme, were also reported in just under half of responses. Experiencing job insecurity, such as becoming unemployed, was reported by a number of participants, as was fearing such insecurity. Results of occupational impacts of the pandemic in other samples highlight that experiencing or fearing job insecurity was not unique to our participants. In a sample of adults in April 2020, approximately 40% reported being either worried or very worried about the impact of COVID-19 on employment.<sup>25</sup> Meanwhile, undergraduates reflecting on distress related to COVID-19 in April and May of 2020 emphasized financial burden, strain, and worry about employment similarly to our sample.<sup>18</sup> In June 2020, nearly 60% of emerging adult participants endorsed personal or household experience with job instability.<sup>19</sup> Economic instability related to the pandemic may be increasing concerns of career potential and hiring post-graduation is not a new concern for undergraduates.<sup>6,7</sup>

#### 4.1.4. Themes over time

Further, themes were reported by our sample at similar frequencies across time points. Themes that did have change in endorsement provide insight into how life continued to be altered and adjusted as the pandemic continued. For example, *Milestones Canceled/Delayed* was reported less over time; in July 2020, graduations, spring and summer weddings, and other life milestones had recently, and unexpectedly been delayed or canceled altogether. By January of 2021, COVID-19 had been in the headlines across the United States for nearly a year, and while milestone events continued to be impacted, it may be that these impacts had become more normalized, routine, or were never scheduled in the first place. Additional changes in the frequencies of themes also demonstrate the complex nature of the economic context across time points. While experiencing job insecurity was relatively stable across time points, fear of job insecurity decreased over time and job changes increased.

#### 4.2. Quantitative context

In addition to the open-ended responses, we examined quantitative responses on validated measures. These data reflect a decrease in general stress over our time points, but no significant change in COVID-19-related distress. Participants endorsed significantly more items related

to COVID-19 exposure, such as encountering someone with the virus or experiencing changes in responsibilities at work and home, in January 2021. While COVID-19 exposures increased, participants did not report a significant change in the impact of the virus.

Consistency in COVID-19 specific distress paired with a decrease in general stress provides insight into the general complexity of experiences during this time. Duality observed within qualitative responses may also be observed within our sample's distress data, in which the positive and negative impacts balance out one another's influence, thus resulting in consistent COVID-19-related distress despite a wide array of reported stressors. It also may be the case that the primary COVID-19-related stressors changed significantly at time points. For example, at the first time point, students were completing their first round of online education and still adjusting to the ramifications of quarantine; while by the second time point, participants may have adjusted to online education and quarantine generally but may have just experienced the first round of major holidays within the context of COVID. These stressors are unique from one another; however, they may have received similar ratings on our measure of COVID-19-related distress.

#### 4.3. Limitations and future directions

There are a few notable limitations for this study. First, as this data was collected early in the pandemic, we cannot infer how stress and impacts of COVID-19 have continued to impact this sample. Additional studies are needed to assess the current stress levels and impacts of the pandemic on similar samples. This data would also be helpful in increasing our understanding of changes in stress throughout the pandemic. Second, the CEFIS measure's distress score is limited to a single question. Thus, this assessment limits the nuance to the nature of the distress reported. While the qualitative responses provide important context, there is room for improvement in future studies to gather more details about COVID-19-related distress. Third, our sample includes individuals who were enrolled at a private university at baseline. While our sample is relatively diverse, it did include primarily white and non-Hispanic individuals who had, at baseline, access to a private university and thus is limited in generalizability. Finally, additional sociopolitical context and the role of marginalization were not accounted for in this study but may be one reason that general distress was higher in July 2020 compared to January 2021. The summer of 2020 was a time of local, national, and international turmoil and reckoning following the murders of Breonna Taylor in March and George Floyd in May 2020 by police. Differing responses to these murders and reactions to the subsequent protests were products of a polarized political and social climate. No qualitative responses included specific reference to this additional social context; however, responses such as "frustration with the current administration" and "at least I learned a lot about history and politics" point to the sociopolitical atmosphere being a relevant context for at least some of our sample. As the general distress measure is not specific to any singular stressor, such as COVID-19, it was likely reflecting stress both related to COVID-19 and events outside of the pandemic. This knowledge, along with responses that alluded to sociopolitical contexts, may reflect that the general decrease in distress was related to changes in sociopolitical contexts over time. Additional work is needed to better understand how sociopolitical context, systemic privilege, and marginalization related to perceived pandemic experiences, especially given that those who hold marginalized economic positions and ethnic identities experienced more severe impacts.<sup>26</sup>

Increasing this understanding will allow for a more directed and informed allocation of support resources within healthcare, higher, and beyond.

#### 5. Conclusions

COVID-19 has had a wide range of impacts on individuals across the lifespan. It is important to study these impacts among emerging adults,

who are poised at a unique transitional period with stressors related to academics, post-graduation plans, and relationships.<sup>6–8</sup> Our study contributes to this literature base by examining the critical compounding impacts of the pandemic within this salient developmental period. Impacts on relationships, physical and psychological health, and employment were frequently reported and should thus be considered as important factors potentially influencing well-being of emerging adults in health care settings. Interestingly, many participants shared experiences that highlighted both positive and negative impacts of the pandemic. Within our sample, COVID-19-related distress did not significantly change between July 2020 and January 2021 and qualitative responses suggest relative consistency in the impact of the pandemic across this time. Future data should be collected to determine the long-term impacts of the pandemic on this population as their formative and transitional years have been uniquely impacted, especially for those navigating acute or chronic health challenges. Additionally, as recurring waves of COVID-19 are unavoidable, we must prepare evidence-based responses designed to support emerging adults.

### Ethical statement

Institutional Review Board approval was obtained prior to data collection for this study.

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### CRediT authorship contribution statement

**Steven A. Miller:** Conceptualization, Formal analysis, Funding acquisition, Methodology, Validation, Writing – review & editing. **Joanna Buscemi:** Conceptualization, Funding acquisition, Methodology, Validation, Writing – review & editing. **Susan T. Tran:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Methodology, Supervision, Validation, Writing – original draft, Writing – review & editing. **Keely H. Bieniak:** Conceptualization, Data curation, Formal analysis, Methodology, Supervision, Validation, Writing – original draft, Writing – review & editing. **Helen Bedree:** Conceptualization, Data curation, Formal analysis, Methodology, Validation, Writing – original draft, Writing – review & editing. **Nicole Geanous:** Conceptualization, Formal analysis, Methodology, Validation, Writing – original draft, Writing – review & editing. **Rachel Neff Greenley:** Conceptualization, Funding acquisition, Methodology, Validation, Writing – review & editing.

### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Data availability

Data will be made available on request.

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