Exposure to COVID-19 Pandemic Stress:

Associations with Depression and Anxiety in Emerging Adults in the U.S.

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Conflict of Interest Statement

The authors report no conflicts of interest.

Abstract

Background: Stressful events due to the COVID-19 pandemic are likely to have profound effects on mental health, and validated methods for assessing these experiences and associations with psychopathology are needed. We developed the Pandemic Stress Questionnaire (PSQ) and tested its psychometric properties, characterized experiences in emerging adults, and examined associations with internalizing symptoms. **Methods:** Emerging adults (*N*=450) completed the PSQ and measures of internalizing symptoms and perceived stress through an online platform in May 2020. One month later, 288 participants completed a follow-up questionnaire to assess reliability of the PSQ and longitudinal associations between stress and internalizing symptoms. **Results:** Results supported the validity/reliability of the PSQ and indicated that stressful events were highly prevalent in May, particularly among younger, female, and Black emerging adults. Symptoms of depression and anxiety were high overall, but decreased at the follow-up assessment. Pandemic-related stress was moderately associated with both depression and anxiety at each assessment, but baseline stress did not predict change in symptoms when controlling for baseline symptoms. **Conclusions:** Results provide empirical evidence that emerging adults are at high risk for depression and anxiety related to the psychosocial effects of the COVID-19 pandemic, and highlight specific types of experiences associated with greatest risk. Further, this study provides support for a questionnaire measure of experiences related to the COVID-19 pandemic that can be applied in future work to advance understanding of risk and resilience in response to stressful events.

Keywords: coronavirus, pandemics, depression, anxiety, young adult

On March 11, 2020, the World Health Organization declared the novel coronavirus SARS-CoV-2, which causes the disease COVID-19, to be an international pandemic (Cucinotta & Vanelli, 2020). By late April, 316 million people were under stay-at-home orders in the U.S. to minimize the spread (Mervosh, Lu, & Swales, 2020), and over 20 million people lost jobs (U.S. Bureau of Labor Statistics, 2020). In addition to its massive physical health burden, the pandemic has had profound psychosocial effects, including interpersonal, occupational, and financial strain, with the potential to dramatically increase rates of depression and anxiety. The current study presents a new measure for assessing events related to the pandemic and a longitudinal examination of experiences of stress, depression, and anxiety in emerging adults in the U.S.

Stressful events are a well-established risk factor for depression and anxiety. Longitudinal evidence indicates that chronic and episodic stressors often precede the onset of internalizing disorders (Hammen, 2005; Harkness & Monroe, 2016; Rapee, 1991; Uliaszek et al., 2012). Critically, experiences associated with the pandemic, including social isolation, interpersonal strain and uncontrollable stressors, have particularly strong effects on internalizing symptoms (e.g., Hawkley & Cacioppo, 2010; Maier & Seligman, 2016; Rudolph et al., 2000; Tabak et al., 2015; Vrshek-Schallhorn et al., 2015). Further, unemployment and economic recession have been consistently linked with increased rates of depression, anxiety, and suicide (Frasquilho et al., 2016; Paul & Moser, 2009).

There is a critical need to examine the impacts of COVID-19 on mental health to inform intervention and policy (Gruber et al., 2020). Emerging evidence links the pandemic to high rates of depression and anxiety (Elmer, Mepham, & Stadtfeld, 2020; Rajkumar, 2020), with 20-44% of adults reporting clinical levels of anxiety and depression (Cao et al., 2020; Hyland et al., 2020; Odriozola-González, Planchuelo-Gómez, Irurtia-Muñiz, & de Luis-García, 2020). In addition to understanding mental health in the context of the ongoing pandemic, examination of responses to major events with widespread effects across communities can inform

understanding of risk and resilience. Such approaches have been applied to examine impacts of natural disasters (e.g., Kopala-Sibley et al., 2016; Kujawa et al., 2016) and terrorist attacks (e.g., McLaughlin et al., 2014), often in the context of ongoing longitudinal studies in which pre-existing vulnerabilities that predict responses to major stressors can be identified. However, to advance this work, tools for measuring the unique experiences associated with the COVID-19 pandemic are needed.

Although experiences of COVID-19 must be studied across the lifespan, we focus here on late adolescence and emerging adulthood, a high-risk time for the development of mood and anxiety disorders (Kessler et al., 2005). Although separation and social anxiety disorders often emerge in childhood or early adolescence, generalized anxiety disorder (GAD) and major depressive disorder continue to increase in prevalence into early adulthood (Kessler et al., 2007). Compared to later adulthood, the physical health effects of COVID-19 on emerging adults are much less severe, but emerging adults likely experience a range of psychosocial effects as COVID-19 disrupts educational and occupational opportunities as they strive for independence from their parents. Measures assessing the events common in this developmental period are needed to characterize experiences during this crisis and their effects on internalizing disorders, as well as for applications in longitudinal studies to inform understanding of vulnerabilities that shape the development of psychopathology following stress.

Given complex links between stress and psychopathology, careful consideration is needed to avoid confounding reports of stress with the state effects of depression and anxiety. Interview measures are the gold-standard for stress assessment because contextual information can be obtained and severity determined objectively by an outside rater (Hammen, 2005; Harkness & Monroe, 2016). However, the time and costs associated with administration of stress interviews restricts feasibility for quickly sampling experiences during widespread crisis. Despite limitations, questionnaire measures are strengthened by reports of exposure to

specific events, rather than relying on subjective severity (Hammen, 2005). Considering the unique combination of experiences related to the COVID-19 pandemic, validated measures are needed to assess a broad range of possible events and effects on mental health.

We developed a questionnaire measure of occurrence of events and subjective severity as a result of the pandemic (Pandemic Stress Questionnaire [PSQ]). The first goal was to test a young adult version of the PSQ in a longitudinal online study completed in May and June 2020. We examined convergent validity with an established measure of perceived stress, test-retest reliability of the measure across 1 month, and characterized the prevalence of stressful experiences at each assessment. Given disparities in COVID-19 health outcomes for Black/African American and Hispanic/Latinx people in the U.S. (Centers for Disease Control and Prevention, 2020), we tested the hypothesis that disparities may also emerge in exposure to stressors. Finally, we examined rates of clinical levels of anxiety and depression, and tested the cross-sectional and longitudinal effects of pandemic-related events on symptoms. We hypothesized that greater stressful events would be associated with greater symptoms at baseline and predict increases in symptoms across time. We also explored unique associations of face-valid PSQ subscales with symptoms of depression and anxiety.

Materials and Methods

Participants

Participants were recruited through the online platform CloudResearch using the Mechanical Turk (MTurk) Toolkit. The study was open to U.S. participants aged 18-25 who were fluent in English, with 65 slots reserved specifically for participants identifying as Black/African American. Procedures were approved by the Vanderbilt University Institutional Review Board and participants completed electronic informed consent. The study was posted on MTurk from May 8-13th. Participants received $3 for completing the full questionnaire. One month later (June 9-15th), participants were invited to repeat measures of stress and symptoms and received $1.50.

Several steps were taken to ensure data quality. First, CloudResearch verifies worker country and blocks duplicate IP addresses. Second, participants responded to qualitative items describing their experiences during the pandemic and those who provided nonsensical responses were removed from analysis. Finally, participants with unrealistically fast questionnaire completion times (less than 5 minutes) were excluded. Mean completion of T1 questionnaires was 10.51 minutes for the included sample (SD=6.14). A total of 518 participants began questionnaires. Of these, 6 were excluded because they were not 18-25 years old, 27 for incomplete questionnaires and/or nonsensical open-ended responses, and 35 for fast completion times, resulting in a sample of 450. Of these, 291 completed the follow-up assessment 1 month later and 3 were excluded for questionable responses to qualitative items, leaving 288 participants with both Time 1 (T1) and Time 2 (T2) data.

The T1 sample was 36.0% male, 62.0% female, and 1.6% nonbinary, and 0.4% preferred not to say. Mean age was 21.87 years (SD=2.01). Regarding ethnicity/race, 17.3% were Hispanic/Latinx, 63.8% White/Caucasian, 14.2% Asian, 13.3% Black/African American, 1.1% American Indian, 5.1% biracial or multiracial, and 2.4% preferred not to report race. Most of the sample completed high school (41.1%), 2-year (10.7%), or 4-year (44.2%) college; 56.9% were current students, with 27.1% employed full time and 22.7% unemployed. In terms of U.S. regions, 37.6% lived in the South, 22.4% Northeast, 20.7% West, and 18.7% Midwest. Participants who completed the follow-up questionnaire did not significantly differ from those who did not on age, T1 pandemic-related stress, depression or anxiety, or distribution of gender/race/ethnicity (ps>.06).

Measures

Pandemic Stress Questionnaire (PSQ)

The PSQ is a 25-item measure of exposure to stressful events due to the COVID-19 pandemic and subjective severity of events, formatted using a structure similar to the Adolescent Perceived Events Scale (Compas, Davis, Forsythe, & Wagner, 1987). Items

assessed 6 face-valid subscales: general life disruption, interpersonal, financial, education/professional goals, health-self, and health-others. For each item, participants selected "Yes" or "No" to indicate whether each event happened to them. Endorsed events were rated on a 1 (*not at all bad*) to 5 (*extremely bad*) severity scale, considering negative impact, frequency, and duration of the event. Details on measurement development and the full questionnaire are available in Supporting Information.

The PSQ was completed at T1 and T2 to examine test-retest reliability. At both assessments, participants were expected to report experiences that happened at any time due to the pandemic. Total endorsed events were summed across the measure and within subscales. For severity, scores were recoded such that denying endorsement of an event or endorsing an event but rating severity as 1 (*not at all bad*) was scored as 0. Scores of 2-5 (ranging from *slightly bad* to *extremely bad*) were recoded from 1-4, and average severity across events was calculated.

To assess convergent validity of the PSQ with an established measure of general stress, participants completed the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) at T1. The PSS is a 10-item questionnaire assessing current feelings of stress and control over stressors in the last month that demonstrated good internal consistency (Cronbach's alpha=.85).

Symptoms of Depression and Anxiety

Depressive symptoms were measured at T1 and T2 using the 9-item Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001). Anxiety symptoms were assessed at T1 and T2 using the 7-item GAD-7 (Spitzer, Kroenke, Williams, & Löwe, 2006). Participants rated the frequency of each symptom in the previous two weeks on a scale from 0-3, with scores summed for a continuous measure of depression and anxiety and ≥10 considered to be in the clinical range. PHQ-9 and GAD-7 showed excellent internal consistency (Cronbach's

alphas=.90 and .93, respectively at T1, and .92 and .92 at T2). One participant selected "Prefer

not to answer" on 5 PHQ items at T1 and data were considered missing.

Data Analysis Plan

First, we examined validity and reliability of the PSQ by testing bivariate correlations with

PSS and between T1 and T2 PSQ. Second, we explored the frequency of events. Next, we

used independent *t*-tests to examine whether Black/African American and/or Hispanic/Latinx

young adults reported greater COVID-19 events or severity at T1. Levene's test was used to

test for equality of variances. We then tested bivariate correlations between PSQ

events/severity and depression and anxiety at T1 and T2. Next, we conducted multiple

regression analyses to examine the unique associations of PSQ subscales with depression and

anxiety, covarying gender. Lastly, to test the extent to which PSQ events predict symptom

change across time, we conducted multiple regression analyses with PSQ events at T1 or T2

predicting symptoms at T2, covarying gender and symptoms at T1. To account for missing data

at T2, longitudinal correlation/regression analyses were computed with full information

maximum likelihood (FIML) using the lavaan package in R (Rosseel, 2012), and paired-samples

t tests were computed with restricted maximum likelihood (REML) using the lme4 package in R

(Bates, Mächler, Bolker, & Walker, 2015).

Additional exploratory analyses examined associations between individual PSQ items

and depression and anxiety, as well as correlations between PSQ events and other measures in

subgroups of the sample (see Supporting Information).

Results

PSQ Validation

T1 PSQ total events and severity were moderately correlated with PSS, assessed

concurrently (Pearson's *r*=0.41 and 0.42, *p*s<.001), providing support for convergent validity.

Because the PSQ uses a formative measurement model assessing a range of possible events

that may occur in absence of other experiences, internal consistency was not examined, but

total PSQ events and severity were highly correlated across time (rs=.78 and .82, respectively), providing support for test-retest reliability. Total PSQ events and severity did not significantly change across assessments (ps>.23).

Prevalence of PSQ Events

The frequencies of endorsement of each PSQ event and subscale at T1 and T2 are presented in Table 1. Most participants reported general life disruption, as well as financial and interpersonal events, with health events reported least frequently. Commonly endorsed items included difficulty obtaining basic supplies, unable to be with close others, cancelling travel or other important events, and financial strain, but all events were endorsed by at least some participants. Less common but potentially impactful events included the death of a loved one and experiences of racism/discrimination as a result of the pandemic (62.5% of participants endorsing racism/discrimination at T1 identified as Asian). Although total events did not significantly change across assessments, interpersonal events *increased* from T1 to T2, t(329.11)=2.25, p=.03, and financial events *decreased*, t(306.68)=-3.02, p<.01. No significant changes were observed for the other subscales, ps>.09.

Racial/Ethnic Differences in Stress Exposure

Independent samples *t*-tests were conducted to test whether Black/African American and Hispanic/Latino emerging adults experienced more PSQ events or greater severity. Black/African American participants reported greater PSQ severity at T1 (*M*=0.62, *SD*=0.53), compared to other races (*M*=0.50, *SD*=0.36), t(76.73)=-1.89, 1-tailed p=.03 (2-tailed p=.06), adjusted for equal variances not assumed, but not greater PSQ events (p=.58). No significant differences were observed in PSQ events/severity for participants who identified as Hispanic/Latinx compared to those who did not (ps>.41). Further analyses within subgroups of participants are presented in Table S2 in Supporting Information.

Associations of Pandemic-Related Stress with Depression and Anxiety

At T1, 45.1% of the sample met the clinical cutoff for depression. Depressive symptoms decreased from T1 to T2, $t(312.33)$=-4.57, p<.001, with 35.8% of the sample meeting the clinical cut-off at T2. Further, 22.9% of the sample endorsed thoughts that they would be better off dead/thoughts of hurting self on the PHQ-9 at T1, and ratings did not significantly change from T1 to T2 (p=.63). At T1, 37.1% met the clinical cutoff for anxiety. Anxiety symptoms also decreased from T1 to T2, $t(315.64)$=-2.36, p=.02, with 32.3% meeting the clinical cut-off at T2.

Bivariate correlations between demographics, PSQ measures, and symptoms of depression and anxiety at T1 and T2 are presented in Table 2. Younger and female participants reported greater PSQ events/severity at T1, and female participants reported greater depression and anxiety. PSQ total events/severity were moderately associated with depression and anxiety cross-sectionally and longitudinally.

Next, multiple regression analyses were computed to examine the unique effects of PSQ subscales on depression and anxiety at T1 (Table 3). We focused on events rather than severity, considering subjective ratings of severity may be more confounded with state effects of depression/anxiety. Gender was included as a covariate. For depression, general life disruption, financial events, and disruption of education/goals were significantly associated with symptoms when accounting for other subscales (Figure 1). For anxiety, interpersonal events, financial events, and disruption of education/goals were significantly associated with symptoms (Figure 2). See Table S1 for exploratory correlations of individual PSQ events with symptoms.

Lastly, multiple regression analyses were conducted to test whether T1 PSQ events predicted T2 symptoms covarying T1 symptoms and gender. T1 PSQ events did not predict T2 depression, b=.03, SE=.08, p=.70, or anxiety, b=.01, SE=.08, p=.92, when controlling for T1 symptoms and gender. To better understand these nonsignificant effects, we tested whether T2 PSQ events remained significant in predicting T2 symptoms covarying T1 symptoms and gender. T2 PSQ events did not significantly predict T2 depression when covarying T1

depression and gender, b=.13, SE=.08, p=.11, but did significantly predict T2 anxiety, b=.17, SE=.08, p=.03, when covarying T1 anxiety and gender.

Discussion

The current longitudinal study tested a new questionnaire to assess experiences related to the COVID-19 pandemic in emerging adults, examined frequency of stressful events, and tested cross-sectional and longitudinal associations with depression and anxiety. Results provide initial support for the validity and reliability of the PSQ and empirical data to characterize exposure to psychosocial stressors in emerging adults. Further, our results support prior evidence of high rates of depression and anxiety among emerging adults in May 2020, but also indicated a decrease one month later. Although COVID-19 health problems were very rare in this sample, the associated psychosocial experiences were moderately associated with symptoms of depression and anxiety. Finally, racial disparities in stress emerged, such that Black emerging adults endorsed greater stress severity compared to participants of other races.

The current study is among the first to characterize psychosocial experiences of U.S. emerging adults during the COVID-19 pandemic. Experiences of general life disruption, including difficulty obtaining supplies and disruptions in travel plans and events were very common, as were financial and interpersonal stressors, including separation from close family and friends, financial strain, and job loss/reduced hours. Endorsement of health effects due to COVID-19 was rare and not significantly related to depression or anxiety. Instead, the psychosocial experiences of life disruption and financial and interpersonal strain were more strongly associated with internalizing symptoms. In addition, higher levels of stressful events and/or severity were endorsed by younger participants, women, and Black emerging adults.

Our results provide empirical support for high rates of depression and anxiety in emerging adults in May 2020. Interestingly, symptoms decreased one month later, which could be due in part to repeated administration of the measure (Jorm, Duncan-Jones, & Scott, 1989) or to changes in the psychosocial consequences of the pandemic. Much lower rates of clinical

depression and anxiety (approximately 5-9%) have been observed in community samples prior to the pandemic (Löwe et al., 2008; Martin, Rief, Klaiberg, & Braehler, 2006; Patten & Schopflocher, 2009; Shim, Baltrus, Ye, & Rust, 2011), suggesting increases in depression and anxiety due to the pandemic. At the same time, the prevalence of internalizing disorders in the current study must be interpreted cautiously given the sample and lack of data prior to the pandemic. MTurk participants tend to report higher rates of clinical depression than the general population due in part to younger age, lifestyle factors like lower physical activity and disrupted sleep, but also inclusion of suspicious responses and inattentive participants (Arditte, Çek, Shaw, & Timpano, 2016; Ophir, Sisso, Asterhan, Tikochinski, & Reichart, 2020). We took several steps to ensure data quality, including reviewing responses to open-ended questions, excluding participants with fast completion times, and evaluating reliability of measures, suggesting that the high rate of depression is unlikely to be fully attributed to issues with data quality. Although representative samples are needed to determine the prevalence of depression and anxiety amidst the COVID-19 pandemic, our results provide preliminary evidence that these experiences may be associated with an increase in internalizing symptoms, followed by a relative reduction in symptoms in June.

Further supporting the effects of the pandemic on internalizing symptoms, stressful events/severity were moderately associated with symptoms of depression and anxiety cross-sectionally and longitudinally. Effects of individual subscales on symptoms of depression and anxiety were more modest, but unique effects of general life disruption, disruption of education/professional goals, and interpersonal and financial strain emerged, similar to observations from prior COVID-19 research in college students (Cao et al., 2020). Of note, the effect of interpersonal strain on depressive symptoms did not reach significance when accounting for other subscales, but was significant in bivariate correlations (Table S1). Surprisingly, pandemic-related events at the initial assessment did not predict changes in symptoms at follow-up when controlling for baseline symptoms. This could suggest that for

many emerging adults, pandemic-related stress may not have lasting effects on mental health. Supporting this, pandemic-related events at follow-up were cross-sectionally associated with anxiety symptoms when controlling for baseline symptoms, suggesting that the lack of prediction from baseline events could be due in part to changes in the psychosocial consequences of the pandemic one month later. It is also possible that the relatively short interval between assessments may have limited our ability to detect change in symptoms.

A few limitations should be noted. The PSQ is limited by reliance on subjective interpretations of events. Adapting items as an interview would allow for collection of contextual information and objective ratings, as well as consideration of whether internalizing symptoms may be reasonable reactions to the circumstances. The PSQ was written to assess experiences related to the pandemic at any time, and to evaluate test-retest reliability, it was administered with the same instructions at both assessments, preventing us from specifically measuring new experiences between assessments. Our ability to assess reliability of the measure was limited by new events in the intervening period and the possibility of variability in the time frame participants used to rate events at follow-up. That is, financial events decreased at follow-up, which could be due to some participants rating change in events since the initial assessment, without being prompted to do so. The age range, online, and U.S. sample limits generalizability. Extending this measure to earlier adolescence and older adulthood with longer follow-ups is needed to examine the effects of pandemic-related stress on trajectories of symptoms. The PSQ can further be applied to ongoing longitudinal studies to advance understanding of pre-existing vulnerabilities that predict responses to major stressors.

Conclusion

This study is among the first longitudinal studies to assess COVID-19 stressful events and characterize experiences and internalizing symptoms in emerging adults. There is still much work to be done to understand the mental health effects of this unprecedented global crisis and to inform clinical assessment and intervention. The current study provides empirical support for

a questionnaire measure to advance this critical work and emphasizes the need for further

consideration of psychosocial experiences due to the pandemic in both clinical practice and

research. Our results highlight the impacts of psychosocial stressors due to the pandemic on

the mental health of emerging adults, but also provide encouraging preliminary evidence of

improvements in internalizing symptoms across time.

Data Availability Statement

Data supporting these findings are available from the corresponding author by request.

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Table 1. Frequency of exposure to events assessed by the Pandemic Stress Questionnaire (PSQ) at Time 1 (May 2020; *N*=450) and T2 (June 2020; *N*=288). The PSQ was administered with the same instructions at each assessment and asked about experiences related to the pandemic that occurred at any time. Subscale frequencies reflect the proportion of participants endorsing 1 or more event in each domain.

Subscale/item	T1 %	T2 %
General life disruption subscale	90.2%	91.3%
I had difficulty obtaining basic supplies because of the coronavirus pandemic (e.g., food, medicine, toilet paper).	54.4%	42.4%
I had to move unexpectedly because of the coronavirus pandemic.	19.6%	24.0%
I had problems with my visa or the Student and Exchange Visitor Information System because of the coronavirus pandemic (e.g., unable to renew).	0.9%	1.4%
I had to cancel travel or experienced a major disruption in travel plans because of the coronavirus pandemic.	52.2%	50.0%
I had to cancel or postpone important events because of the coronavirus pandemic (e.g., events for a club, sporting events, major celebrations).	61.3%	63.2%
I had to take on additional responsibilities caring for others (e.g., children, other family members) due to the coronavirus pandemic.	18.0%	18.4%
Interpersonal subscale	77.1%	80.9%
I was unexpectedly separated from family, friends, or others close to me because of the coronavirus pandemic (e.g., due to moves or travel restrictions).	38.0%	42.4%
I was unable to be with close family, friends, or partners because of the coronavirus pandemic.	66.2%	68.4%
I had conflicts or arguments with my partner or family members due to coronavirus (e.g., conflicts about living arrangements, shared work space, schedule expectations).	29.6%	32.3%
I experienced racism or discrimination due to the coronavirus pandemic.	5.3%	7.3%
Someone close to me died from COVID-19.	3.8%	6.3%
Financial subscale	62.9%	54.6%
I experienced significant financial strain due to the pandemic (e.g., due to travel, purchasing supplies, paying for housing).	41.6%	32.6%
I temporarily or permanently lost a job or had my work hours greatly reduced due to the coronavirus pandemic.	42.2%	35.4%
Someone I rely on for financial support (e.g., partner, parent) temporarily or permanently lost a job or had their work hours greatly reduced because of the coronavirus pandemic.	23.3%	17.7%
Education/professional goals subscale	53.3%	51.4%
My workload increased substantially because of the coronavirus pandemic.	19.8%	19.1%
I was unable to complete important requirements for my education or professional goals due to the coronavirus pandemic (e.g., coursework, taking the SAT or GRE, thesis).	21.6%	14.6%
I had problems with online courses and/or remote work (e.g., slow connection, no computer or internet access, major differences in time zone).	34.7%	34.4%
Health (self) subscale	31.1%	30.9%
I had symptoms of COVID-19 (e.g., cough, fever, trouble breathing) but was unable to get tested.	7.6%	6.6%
I was tested for COVID-19.	3.1%	5.6%
I was diagnosed with COVID-19.	0.2%	1.4%
I had difficulty accessing or paying for physical or mental health care for myself or my dependents due to the coronavirus pandemic.	11.6%	10.4%
I was quarantined for 2 weeks or longer due to possible exposure to COVID-19 or due to international travel.	16.4%	15.6%

Health (close others) subscale	28.7%	26.7%
Someone close to me had symptoms of COVID-19 (e.g., cough, fever, trouble breathing) but was unable to get tested.	12.0%	9.4%
Someone close to me was diagnosed with COVID-19.	12.2%	14.2%
Someone close to me was quarantined for 2 weeks or longer due to possible exposure to COVID-19 or due to international travel.	20.9%	19.1%

Table 2. Descriptive statistics and bivariate correlations (Pearson's *r*) between study variables.

	M(SD)/%	1	2	3	4	5	6	7	8	9
1. Age	21.87 (2.01)	--								
2. Gender (% female)	62.0	.07	--							
3. PSQ events – T1	6.16 (3.49)	-.15**	.13**	--						
4. PSQ severity – T1	0.51 (0.39)	-.14**	.15**	.88***	--					
5. Depressive symptoms – T1	9.50 (6.78)	-.09	.17***	.38***	.37***	--				
6. Anxiety symptoms – T1	7.84 (6.22)	-.04	.20***	.37***	.40***	.80***	--			
7. PSQ events – T2	5.92 (3.22)	-.11*	.15**	.78***	.77***	.33***	.34***	--		
8. PSQ severity – T2	0.48 (0.39)	-.07	.15**	.67***	.82***	.33***	.36***	.86***	--	
9. Depressive symptoms – T2	8.28 (6.95)	-.07	.11*	.30***	.32***	.78***	.70***	.30***	.33***	--
10. Anxiety symptoms – T2	7.35 (6.00)	-.00	.15**	.28***	.32***	.70***	.76***	.33***	.37***	.85***

Note: T1=Time 1; T2=Time 2; PSQ=Pandemic Stress Questionnaire; *p* < .05, **p* < .01, ***p* < .001

Table 3. Multiple regression analyses examining unique cross-sectional effects of PSQ subscale events on symptoms of depression and anxiety.

Depressive symptoms – T1			Anxiety symptoms – T1		
Predictor	**b(SE)**	**β**	**Predictor**	**b(SE)**	**β**
Gender (female)	1.72 (0.62)	0.12**	Gender (female)	2.04 (0.57)	0.16***
General disruption – T1	0.75 (0.29)	0.13**	General disruption – T1	0.46 (0.26)	0.09
Interpersonal – T1	0.54 (0.32)	0.09	Interpersonal – T1	0.89 (0.30)	0.16**
Financial – T1	0.96 (0.32)	0.14**	Financial – T1	0.76 (0.29)	0.12**
Education/Goals – T1	0.93 (0.38)	0.12*	Education/Goals – T1	0.80 (0.35)	0.11*
Health (Self) – T1	0.74 (0.51)	0.07	Health (Self) – T1	0.14 (0.47)	0.02
Health (Others) – T1	0.52 (0.42)	0.06	Health (Others) – T1	0.54 (0.38)	0.07

Note: T1=Time 1; *p < .05, **p < .01, ***p < .001; *b* = unstandardized coefficient; β = standardized coefficient

Figure Captions

Figure 1. Scatterplots depicting the cross-sectional effects of general life disruption, financial events, and disruption of education/goals on depressive symptoms (Note: event measures reflect residual scores adjusting for the remaining PSQ subscales)
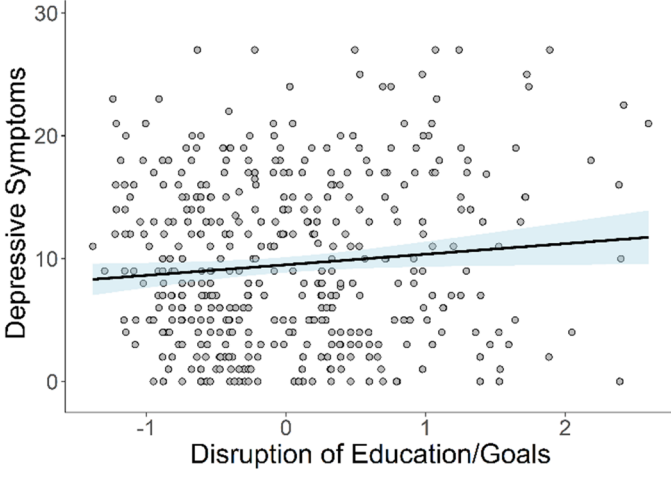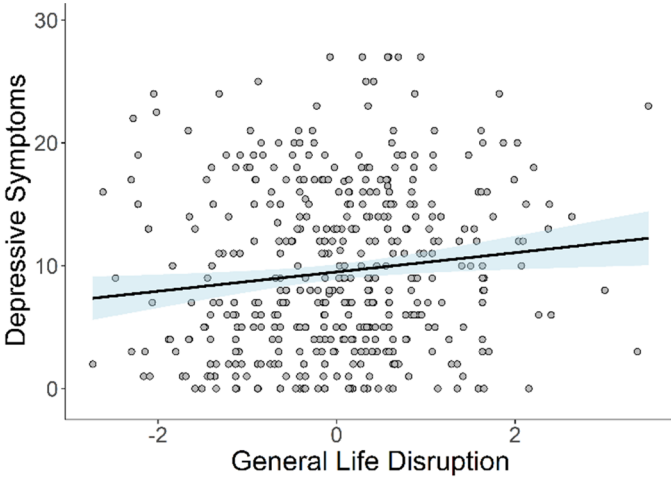
Figure 2. Scatterplots depicting the cross-sectional effects of interpersonal events, financial events, and disruption of education/goals on anxiety symptoms (Note: event measures reflect residual scores adjusting for the remaining PSQ subscales)