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Americans' Distress Early in the COVID-19 Pandemic: Protective Resources and Coping Strategies

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Crystal L. Park[1], Lucy Finkelstein-Fox[1], Beth S. Russell[2], Michael Fendrich[3], Morica Hutchison[2], and Jessica Becker[3]
[1] Department of Psychological Sciences, University of Connecticut
[2] Department of Human Development and Family Sciences, University of Connecticut
[3] School of Social Work, University of Connecticut

Objective: The rapid emergence of the coronavirus disease 2019 (COVID-19) pandemic in the United States has dramatically altered daily life and taken a toll on Americans' physical, mental, social, and financial well-being. Based on previous widespread disasters, future high prevalence of short- and long-term adverse mental health consequences are anticipated. Studies of COVID-19 outside the United States indicated moderately high levels of distress, but we have little information regarding Americans' distress nor the factors associated with relative distress or adjustment during this unprecedented time. This study represents the first national view of Americans' distress during the massive disruption of COVID-19 and identifies levels of stress exposure, protective psychosocial resources, and coping strategies. *Method:* Data were collected April 7–9, 2020 from an online platform, using best practices for ensuring high-quality data; 1,015 completed respondents are included ([53.9%] women; average age = 38.9 years; mostly White [82.4%] and non-Hispanic [91.5%]). Respondents' locations ranged across the United States, from 18.5% in the Northeast to 37.8% in the South. *Results:* Fairly high levels of stress exposure and peritraumatic and general distress (depression, anxiety, and stress) were reported. Emotion regulation skills along with active and distraction coping emerged as the strongest predictors of lower distress levels. *Conclusions:* These results identify potential targets for online mental health interventions—focusing on engaging in adaptive emotion regulation and coping (e.g., through telehealth mental health first aid)—during the pandemic to offset the likely rise in distress over the months ahead.

Clinical Impact Statement
These findings on stress exposure and distress of Americans early in the pandemic highlight psychosocial resources and coping strategies potentially useful to interventionists seeking to mitigate the immediate adverse mental health effects of the pandemic and to potentially dampen long-term sequelae. This information may also be useful to policymakers preparing for the demands of increased mental health services in the months and years ahead.

Keywords: COVID-19 pandemic, stressors, peritraumatic distress, social support, emotion regulation skills

The rapid emergence of the coronavirus disease 2019 (COVID-19) pandemic in the United States substantially altered daily rou-

tines and brought tremendous uncertainty and disruption. Americans were abruptly forced to navigate school and business

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closures, employment insecurity, and drastic changes in social behavior. Based on early reporting of COVID-19—and on the experiences of SARS, terrorist attacks, and other widespread crises—adverse mental health consequences such as anxiety, depression, and posttraumatic stress symptoms (PTSS) are expected to be substantial and persistent (Galea et al., 2020).

Early COVID-19 studies from China suggest moderate impacts on mental health early in the pandemic (late 2019 and early 2020; Qiu et al., 2020; Zhang et al., 2020). For example, although less than one third of a national sample in China reported elevated depression, anxiety, or stress, 53.8% reported severe PTSS (Wang et al., 2020). Americans reported higher general distress in April 2020 compared with April 2018, suggesting the pandemic was taking a toll (McGinty et al., 2020). We aimed to document levels of distress in the United States and identify the factors associated with distress early in the pandemic. To identify these factors, we applied the transactional stress or coping model (Lazarus & Folkman, 1984). According to this model, individuals' psychosocial resources and coping responses influence the impact of stress exposure on distress (Aldwin, 2007).

This article presents survey results of Americans in early April 2020 assessing both general distress (i.e., depression, anxiety, and stress) and distress specific to COVID-19 (peritraumatic distress, PTD). PTD is particularly relevant in the current pandemic: PTD concerns cognitive and affective responses *during* exposure to severe stressors (e.g., horror, helplessness, fear for safety, or grief; Brunet et al., 2001) and is closely associated with subsequent longer-term adverse mental health sequelae, especially PTSS, in community-wide disasters (e.g., Bell et al., 2017). However, PTD has only been assessed retrospectively—usually long afterward—rather than during a long-lasting and open-ended crisis such as the current pandemic.

Previous research following natural (e.g., floods), technological (e.g., nuclear meltdown), and terrorist-initiated (e.g., 9/11) community-wide disasters has identified potentially helpful demographic factors (male gender, older age, or greater financial resources), psychosocial resources (e.g., emotion regulation skills, social support, or mindfulness), and coping strategies (the specific ways that individuals manage stressors, such as actively trying to resolve some aspects of the situation; Bell et al., 2017; Bonanno et al., 2007). However, whether these helpful resources and coping apply in the context of COVID-19, an ongoing, evolving, and society-wide disruption with proscriptions on many usual social behaviors (CDC, 2020) remains unknown.

Emotion regulation skills have been shown to be protective for individuals exposed to community disasters (Ehring & Quack, 2010), and social support has long been recognized as mitigating the impact of stress on mental health following community-wide disasters (e.g., Pietrzak et al., 2014). In one study of Hurricane Katrina survivors, social support moderated effects of exposure on depression and PTSS 2 years later (McGuire et al., 2018). Although mindfulness is a recent focus of stress research (e.g., Johnson et al., 2014), relatively little work has linked mindfulness to postdisaster adjustment, and of that work, results are mixed. Some studies have found beneficial relations between mindfulness and PTSS (e.g., Nitzan-Assayag et al., 2015) while others have not (e.g., An et al., 2018).

Regarding coping, some strategies generally regarded as helpful, such as active coping and seeking social support (Aldwin,

2007), have been associated with lower PTSS after a community-wide crisis (e.g., Baral & Bhagawati, 2019; Park et al., 2012) while other generally maladaptive strategies, such as substance abuse coping, have been related to higher levels of distress including PTSS specifically following community-wide crises (e.g., Park et al., 2012). In the context of disaster, however, many different coping strategies may be associated with less distress, given the myriad high and low controllability stressors that disaster encompasses (Park & Blake, 2020). For example, religious coping and positive reappraisal are not always shown to be helpful, but after disasters, are often related to less distress (see Park & Blake, 2020, for a review). Similarly, distraction—often shown to be unhelpful (Aldwin, 2007)—may help individuals to cope with aversive aspects of disaster that they can do nothing to solve. The complex role of coping was demonstrated in a study of Nepalese after a major earthquake, in which both active coping and distraction related to lower PTSS 10 months afterward (Baral et al., 2019).

We aimed to document levels of distress in our national sample of Americans early in the pandemic and to test whether psychosocial resources and coping strategies shown to be beneficial in previous disasters would uniquely demonstrate similar favorable relations with distress in the context of COVID-19. Because we expected individuals with greater stress exposure and certain demographic characteristics (e.g., nonmale gender, younger age, or financial insecurity) to exhibit stronger stress responses to the COVID-19 pandemic (see Park et al., 2020), these static risk factors were included as covariates to illuminate the unique associations of psychosocial resources (emotion regulation mindfulness, social support) and coping—all important modifiable factors, on mental health. We hypothesized that the psychosocial resources and coping shown to be helpful in previous studies reviewed above would be helpful here, but we also speculated that a broader range of coping might be favorably related with lower distress given the ongoing nature of the pandemic and diverse stressors it entailed. Identifying helpful psychosocial resources and coping strategies may assist in understanding processes of adaptive adjustment and provide actionable insights for immediate interventions as well as inform future preventive and resilience-enhancing efforts.

Method

Participants

Participants were recruited from the Amazon Mechanical Turk (MTurk) online worker pool. Eligible participants were adults aged 18 or older, residing in the United States, and able to read English. Of the 1,086 unique responses to the baseline study, the final baseline sample included 1,015 participants after removing duplicates and responses completed too quickly (see analysis section below for details). MTurk workers are more diverse than typical student or online forum samples and fairly representative of larger populations, including the United States (Sheehan & Pittman, 2016). Evaluations have found the data obtained on MTurk to be high quality, replicable, and valid across comparisons with frequently used academic platforms and student and professional samples (Kees et al., 2017; Sheehan, 2018). Although some research suggests that MTurk respondents report higher levels of depression than the general population (e.g., Ophir et al., 2020), other studies indicate mental health of MTurk workers approxi-

mates that of the general U.S. population (e.g., Elhai et al., 2016; Kim & Hodgins, 2017; Mortensen & Hughes, 2018).

Data Collection

The University of Connecticut Institutional Review Board (IRB; ×20-0057) approved all study materials. Participants signed up for the study on the MTurk homepage and provided informed consent prior. The project was advertised as an anonymous, longitudinal study of the impact of COVID-19 on daily life, providing $2 in Amazon.com credit for each timepoint completed. Data presented here were collected from April 7–9, 2020, approximately 3 weeks after widespread shelter-in-place recommendations were first issued in the United States.

Measures

Demographics

Participants reported on their location by state, financial security, whether they were a primary caregiver for a dependent, partner status, gender, sexual orientation, race, ethnicity, and age. For descriptive purposes, states were categorized into four distinct regions based on divisions used in the U.S. Census (West, Midwest, Northeast, and South; U.S. Census Bureau, 2020).

COVID-19 Stressors

Based on previous work during SARS and the early months of the COVID-19 pandemic (Brooks et al., 2020; Main et al., 2011;

Qiu et al., 2020), we created a novel measure of COVID-19 stressors. This measure assesses individuals' exposure ("Yes" vs. "No") to 23 stressors in the past week (see Figure 1 for items). A total score of stressor exposure was tallied by summing together the total number of Yes responses (possible range 0–23).

Mindfulness. Mindfulness was assessed using the 10-item Cognitive Affective Mindfulness Scale–Revised (CAMS-R; Feldman et al., 2007). The CAMS-R demonstrates strong psychometric properties in samples not regularly engaged in mindfulness training (Feldman et al., 2007; Finkelstein-Fox et al., 2018). Items on the CAMS-R address present moment awareness and acceptance, nonspecific to stressful experience. Items are rated on a scale of 1 (*rarely/not at all*) to 4 (*almost always*). Cronbach's α in the present sample was .88.

Emotion Regulation Skills. To assess emotion regulation skills, we used the (inverse score of the) 18-item Difficulties in Emotion Regulation Scale (DERS-18; Kaufman et al., 2016; Victor & Klonsky, 2016). The DERS covers domains of emotional awareness, clarity, acceptance, goal pursuit, impulse control, and access to strategies. An inverse of the sum score of the DERS was used to assess general adaptive emotional regulation ability, with total possible scores ranging from − 90 to −18. Cronbach's α was .92 in the present sample.

Social Support. Participants completed the brief four-item appraisal subscale of the Interpersonal Support Evaluation List-12 (ISEL-12; Cohen et al., 1985) as a measure of the perceived availability of supportive others. The ISEL-12 has demonstrated strong psychometric properties in a wide range of samples. The

Figure 1

Stress Exposure and Appraised Stressfulness of COVID-19 Stressors
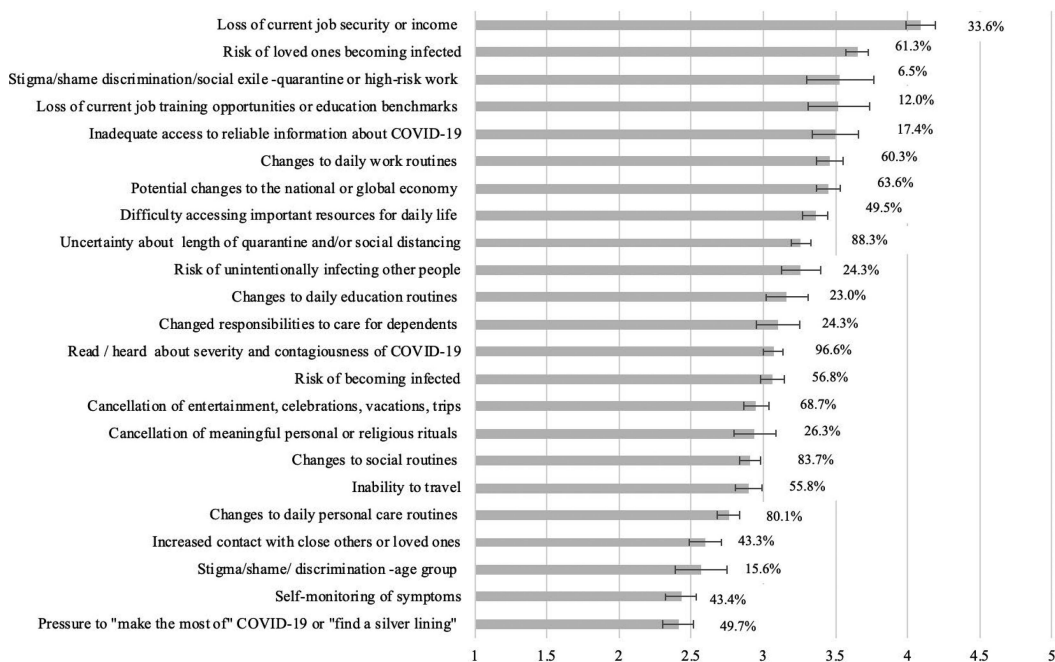
Notes. Percentages listed next to the shaded bars represent the proportion of the total sample (*N* = 1,015) who endorsed experiencing each item. Stress appraisal items (rated 1 = *not at all stressful* to 5 = *extremely stressful*) were only completed for items endorsed. Error bars represent 95% confidence intervals for stress appraisals. A comparison of demographic differences in percent of experienced and average stress appraisals is available in Park et al. (2020).

appraisal subscale was selected here as the most appropriate type of social support to assess given social distancing and other constraints. Items are rated from 0 (*definitely false*) to 3 (*definitely true*) and summed to create a total subscale score for the four appraisal items (range = 0–12). Cronbach's α in the present sample was .88.

COVID-19-Specific Coping. Selected subscales from the Brief COPE (Carver, 1997) assessed the use of active coping (two items, $r = .62$, $p < .001$), self-distraction (two items, $r = .32$, $p < .001$), behavioral disengagement (two items, $r = .59$, $p < .001$), humor (two items, $r = .79$, $p < .001$), substance use (four items, $\alpha = .96$), emotional support-seeking (two items, $r = .72$, $p < .001$), instrumental support-seeking (two items, $r = .71$, $p < .001$), and religious coping (two items, $r = .83$, $p < .001$). For each item, participants were prompted to indicate how much they had coped with "COVID-19 related stressors" over the past week on a 4-point Likert scale ranging from 1 (*I haven't been doing this at all*) to 4 (*I've been doing this a lot*). To address stress mobilization effects often seen in cross-sectional studies of stress and coping (i.e., coping is positively related to distress; Aldwin, 2007), we calculated (a) average of items in each coping subscale and (2) total of all averaged coping subscales converted these average scores into a ratio score (e.g., active coping/total coping expenditure; Vitaliano et al., 1987). Coping scores should be interpreted as relative amounts of each coping strategy compared with one's total coping expenditure.

General Distress. Past-week general distress was assessed using the 21-item version of the Depression, Anxiety, and Stress Scales (DASS-21; Lovibond & Lovibond, 1995). Items on the DASS-21 are rated on a Likert scale ranging from 0 (*did not apply to me at all*) to 3 (*applied to me very much or most of the time*). Scores are summed and multiplied by two to create separate seven-item subscales (subscale scores range from 0–42). The DASS-21 demonstrated good psychometric properties in a Chinese sample exposed to COVID-19 (Wang et al., 2020) as well as for participants recruited via MTurk (e.g., Arditte et al., 2016). Cronbach's αs were .92 for depression, .89 for anxiety, and .90 for stress in the present sample. Although the DASS-21 is a self-report measure and not appropriate for clinical diagnoses, depression scores from 10–12 indicate mild, 13–20 indicate moderate, 21–27 indicate severe, and 28 indicate extreme severity. Anxiety scores from 7–9 indicate mild, 10–14 indicate moderate, 15–19 indicate severe, and 20–42 indicate extreme severity. Stress scores from 11–18 indicate mild, 19–26 indicate moderate, 27–34 indicate severe, and 35–42 indicate extreme severity.

COVID-19-Specific Distress. The Peritraumatic Distress Inventory (PDI; Brunet et al., 2001) is a 13-item self-report measure of distress during a trauma (in this case, COVID-19). Items were scored from 0 (*not at all*) to 3 (*extremely true*); we inadvertently excluded the response option "slightly true." The PDI has shown strong internal consistency and test–retest reliability and validity in previous research (Brunet et al., 2001). An average of all 13 items was tallied. Cronbach's α was .90 in the present sample. To facilitate comparison with the original published measure, scores were also calculated based on response options presented to participants (i.e., 0, 2, 3, and 4), excluding the slightly true (1) option. Original raw scores were used as outcomes for bivariate correlation and regression analyses while the recalculated sum score was used for mean comparisons only (as noted below).

Analysis Plan

Primary analyses to test study hypotheses include basic descriptive (mean and standard deviation), bivariate correlation, and multiple linear regression. The final multiple regression models were tested separately for each of the four distress outcomes (PDS, depression, anxiety, or stress), entering COVID-19 stressor exposure, coping ratios, and psychosocial resources simultaneously as covariates. A priori power analysis for the longitudinal parent study of demographic differences in stress-related adjustment throughout the COVID-19 pandemic suggested that a sample size of $N = 1,050$ would provide 80% power to detect small ($d = .20$) differences between categorical groups imbalanced at a 3:1 ratio and approximately 90% power to detect small ($d = .20$) group differences between groups equally balanced at a 1:1 ratio (two-tailed $\alpha = .05$). Data cleaning and analyses were conducted in SPSS (Version 26).

Duplicate responses were deleted based on participants' self-reported MTurk IDs, retaining the first completed response ($N = 12$). Responses, submitted in <10 min (i.e., less than half of the expected time based on pilot testing) were excluded from analyses ($N = 59$). The final dataset consisted of 1,015 unique participants. Missingness for all items was <1%. Male gender was the comparison group for all gender comparisons; thus, coefficients for female and other gender refer to the size mean difference for female versus male and other gender versus male participants, holding all other predictors constant. Because coping ratio scores were calculated for each coping scale in relation to the others, behavioral disengagement coping was selected as the reference group for the other strategies assessed and omitted from simultaneous multiple regression analyses to prevent perfect multicollinearity.

Results

Our sample was fairly evenly split between male ($n = 453$, 44.6%) and female ($n = 547$, 53.9%) gender, with an additional 15 (1.5%) participants endorsing nonbinary, transgender, self-described, or prefer not to say (collectively coded as "other"), with an average age of 38.9 years ($SD = 13.50$, range = 18–88). The sample was primarily White ($n = 836$, 82.4%) and non-Latinx ($n = 929$, 91.5%) and included African Americans ($n = 122$, 12.0%), Asian/Asian Americans ($n = 121$, 11.9%), Native Hawaiian/Other Pacific Islanders ($n = 50$; 4.9%), and American Indian/Alaskan Natives ($n = 70$; 6.9%). About half of participants ($n = 513$; 50.5%) endorsed having at least "mostly" enough money to meet their needs. Locations were reported across the United States ($n = 188$, 18.5% in the Northeast; $n = 199$, 19.6% in the Midwest; $n = 244$, 30.0% in the West; and $n = 383$, 37.7% in the South). Of the full sample of 1,015, just 61 participants (6.0%) indicated that they had "felt unwell/sick or had a fever in the last 7 days or tested positive for COVID-19."

COVID-19 Stress Exposure and Appraisal

As shown in Figure 1, participants' stressful appraisal ratings were highest for loss of job security or income, followed by risk of loved ones becoming infected, stigma, or shame regarding quarantine or high-risk work, loss of job or education benchmarks, lack

of access to reliable information about COVID-19, changes to daily work routines, and potential changes to the national economy; many stressors were appraised above the scale midpoint. Of these stressors, many were very commonly reported (e.g., reading or hearing about COVID-19, uncertainty about quarantine or social distancing) while others were quite infrequent (e.g., stigma).

Characterizing COVID-19 Distress in the Present Sample

Means for our psychological distress measures suggested a substantial portion of the sample was experiencing heightened distress (see Table 1). The item mean for the rescaled PDI of 1.13 (SD = 0.80), assessing PTD, was higher than that reported in survivors of earthquakes in Christchurch, New Zealand, assessed retrospectively 2 years later (1.02; Bell et al., 2017) but lower than that reported in survivors of earthquakes in Haiti assessed retrospectively two and a half years later (1.5; Cénat & Derivois, 2014).

Means of the DASS-21 subscales demonstrated heightened distress. For depression, 60.2% of the sample scored in the normal range, 7.9% in the mild, 15.1% in the moderate, and 16.7% in the severe or extremely severe. For anxiety, 72.0%, 5.0%, 7.8%, and 16.7%, respectively. For stress, 71.6%, 8.9%, 10.3%, and 10.1%, respectively. These figures were somewhat higher than the COVID-19 study in China (Wang et al., 2020), which found 4.3% of the sample in the severe or extremely severe range for depression, 8.4% for anxiety, and 2.6% for stress. Means for depression and anxiety were somewhat elevated compared with a nationally representative sample of Americans (Sinclair et al., 2012) and other recent MTurk studies (e.g., Elhai et al., 2016; Kim & Hodgins, 2017; Mortensen & Hughes, 2018), but lower than that from another study of MTurk workers (Arditte et al., 2016).

Bivariate Associations Between Stressors, Resources, Coping, and Distress

Bivariate correlation analyses demonstrated moderate positive associations between stressor exposure and distress (rs = .47 for PTD, .23 for depression, .27 for anxiety, and .35 for stress, all ps < .001) and all four distress measures were positively correlated (rs from .60 to .77, all ps < .001). Bivariate correlations between continuous variables are reported in in Table 1.

Transactional Regression Models of Stressors, Resources, and Coping Predicting Distress

Full results of multivariate linear regression models testing the strength of unique associations between stress exposure, psychosocial resources and Covid-19-specific coping strategies on four indicators of distress are provided in Table 2. Significant positive predictors of PTD included female gender (female vs. male β = 0.10, p < .001), stress exposure (β = 0.33, p < .001), and mindfulness (β = 0.12, p <, 001), whereas greater financial resources (β = −0.07, p = .01), emotion regulation skills (β = −0.48, p < .001), and use of distraction (β = −0.12, p < .003), humor (β = −0.22, p < .001), and active (β = −0.08, p = .03) coping had unique negative associations with PTD (Adj R^2 = 0.47, F(15, 999) = 60.34, p < .001). Stress exposure was the sole significant positive predictor of depression (β = 0.11, p < .001),

Table 1
Descriptives and Bivariate Correlations

Construct	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Emotion regulation skills[a]	−36.84 (13.13)	1															
2. Mindfulness	29.03 (5.81)	.63***	1														
3. Social support	8.86 (3.30)	.45***	.35***	1													
4. Total stressor exposure	10.82 (3.81)	−.19***	−.03	.00	1												
5. Active coping	0.16 (0.04)	.25***	.29***	.09**	.00	1											
6. Substance coping	0.09 (0.04)	−.26***	−.19***	−.19***	.02	−.30***	1										
7. Distraction coping	0.17 (0.05)	.03	−.05	−.07*	−.03	.05	−.10**	1									
8. Behavioral disengagement coping	0.09 (0.04)	−.37***	−.31***	−.35***	.06	−.31***	.22***	−.09**	1								
9. Humor coping	0.12 (0.05)	−.06	−.07*	−.09**	−.08**	−.22***	.07*	−.19***	−.01	1							
10. Instrumental support coping	0.12 (0.04)	−.03	−.01	.15***	.12***	−.11**	−.25***	−.21***	−.17***	−.24***	1						
11. Emotional support coping	0.14 (0.04)	.21***	.18***	.43***	.06	−.11**	−.26***	−.20***	−.33***	−.26***	.36***	1					
12. Religious coping	0.11 (0.05)	.11***	.08*	.01	−.03	−.08*	−.26***	−.29***	−.13**	−.26***	−.14***	−.10**	1				
13. Peritraumatic distress[b]	0.93 (0.73)	−.52***	−.24***	−.19***	.47***	−.12**	.12**	−.07*	.20***	−.18***	.16***	.03	−.02	1			
14. Depression	9.59 (10.46)	−.71***	−.47***	−.50***	.23***	−.26***	.28***	.02	.41***	.03	−.02	−.20***	−.15***	.60***	1		
15. Anxiety	5.76 (8.19)	−.60***	−.30***	−.29***	.27***	−.18***	.21***	−.15***	.27***	−.03	.07*	−.10**	.00	.67***	.67***	1	
16. Stress	10.51 (9.65)	−.67***	−.43***	−.31***	.35***	−.21***	.26***	−.05	.28***	.01	.04	−.10**	−.12***	.65***	.77***	.74***	1

Notes. All coping subscales represent a ratio of the specific type of coping vs. total amount of coping (e.g., average active coping/total of all coping averages).
[a] Emotion Regulation Skills taken as the inverse of the DERS total score. [b] Peritraumatic Distress was on a 0–3 scale, as originally administered.
* p < .05. ** p < .01. *** p < .001.

Table 2

Multivariate Linear Regression Predicting Distress

Construct	Estimate	[95% CI]	β	*p*
Peritraumatic distress [a]				
Intercept	0.05	[−0.69, 0.78]	—	.90
Age	−0.01	[−0.00, 0.00]	−.02	.35
Financial needs met	−0.03	[−0.05, −0.01]	−.07	.01
Male vs. female	0.11	[0.06, 0.16]	.10	<.001
Male vs. other	0.02	[−0.18, 0.23]	.01	.82
Emotion regulation skills [b]	−0.02	[−0.02, −0.02]	−.48	<.001
Mindfulness	0.01	[0.01, 0.02]	.12	<.001
Social support	−0.00	[−0.01, 0.01]	−.03	.36
Total stressor exposure	0.05	[0.04, 0.05]	.33	<.001
Active coping ratio	−0.99	[−1.86, −0.10]	−.08	.03
Substance coping ratio	−0.51	[−1.56, 0.55]	−.04	.35
Distraction coping ratio	−1.35	[−2.25, −0.44]	−.12	.003
Humor coping ratio	−2.40	[−3.28, −1.51]	−.22	<.001
Instrumental support coping ratio	0.16	[−0.90, 1.22]	.01	.77
Emotional support coping ratio	−0.11	[−1.06, 0.85]	−.01	.83
Religious coping ratio	−0.80	[−1.68, 0.07]	−.08	.07
	$F(15, 999) = 60.34$, $p <.001$, Adj $R^2 = .47$			
Depression				
Intercept	30.41	[18.14, 42.69]	—	<.001
Age	−0.00	[−0.04, 0.03]	−.00	.94
Financial needs met	−0.84	[−1.20, −0.49]	−.10	<.001
Male vs. female	0.67	[−0.20, 1.55]	.03	.13
Male vs. other	−0.94	[−4.39, 2.52]	−.01	.60
Emotion regulation skills	−0.40	[−0.45, −0.36]	−.51	<.001
Mindfulness	0.04	[−0.06, 0.13]	.02	.43
Social support	−0.68	[−0.84, 0.53]	−.22	<.001
Total stressor exposure	0.30	[0.19, 0.42]	.11	<.001
Active coping ratio	−48.32	[−63.06, −33.57]	−.21	<.001
Substance coping ratio	−17.85	[−35.57, −0.14]	−.07	.048
Distraction coping ratio	−29.39	[44.47, −14.31]	−.13	<.001
Humor coping ratio	−38.48	[53.29, −23.67]	−.18	<.001
Instrumental support coping ratio	−34.56	[52.29, 16.84]	−.12	<.001
Emotional support coping ratio	−24.33	[−40.33, −8.33]	−.10	.003
Religious coping ratio	−46.13	[−60.76, −31.50]	−.24	<.001
	$F(15, 999) = 100.36$, $p <.001$, Adj $R^2 = .60$			
Anxiety				
Intercept	−0.20	[−11.71, 13.31]	—	.97
Age	−0.04	[−0.08, −0.01]	−.07	.01
Financial needs met	−0.15	[−0.48, 0.19]	−.02	.38
Male vs. female	0.74	[−0.08, 1.56]	.05	.08
Male vs. other	0.09	[−3.15, 3.35]	.00	.96
Emotion regulation skills	−0.35	[−0.39, −0.30]	−.55	<.001
Mindfulness	0.17	[0.08, 0.26]	.12	<.001
Social support	−0.16	[−0.31, −0.02]	−.07	.03
Total stressor exposure	0.29	[0.18, 0.40]	.14	<.001
Active coping ratio	−14.41	[−28.23, −0.59]	−.08	.04
Substance coping ratio	2.95	[−13.65, 19.56]	.02	.73
Distraction coping ratio	−29.83	[−43.97, −15.69]	−.17	<.001
Humor coping ratio	−20.42	[−34.30, −6.54]	−.12	.004
Instrumental support coping ratio	−3.84	[−20.46, 12.77]	−.02	.65
Emotional support coping ratio	−8.27	[−23.27, 6.73]	−.04	.28
Religious coping ratio	−3.46	[−17.18, 10.26]	−.02	.62
	$F(15, 999) = 49.82$, $p <.001$, Adj $R^2 = .42$			
Stress				
Intercept	1.83	[−10.54, 14.19]	—	.77
Age	−0.02	[−0.06, 0.01]	−.03	.20
Financial needs met	−0.26	[−0.62, 0.10]	−.03	.15
Male vs. female	1.51	[0.62, 2.39]	.08	.001
Male vs. other	2.94	[−0.54, 6.42]	.04	.10
Emotion regulation skills	−0.39	[−0.44, −0.35]	−.53	<.001
Mindfulness	−0.05	[−0.14, 0.05]	−.03	.32
Social support	−0.14	[−0.29, 0.02]	−.05	.08

Table 2 (*continued*)

Construct	Estimate	[95% CI]	β	*p*
Total stressor exposure	0.54	[0.43, 0.66]	.21	<.001
Active coping ratio	−11.99	[−26.84, 2.86]	−.06	.12
Substance coping ratio	11.89	[−5.96, 29.74]	.05	.19
Distraction coping ratio	−16.67	[−31.86, −1.48]	−.08	.03
Humor coping ratio	−13.99	[−28.91, 0.92]	−.07	.07
Instrumental support coping ratio	−8.75	[−26.61, 9.10]	−.03	.34
Emotional support coping ratio	0.61	[−15.51, 16.74]	.00	.94
Religious coping ratio	−16.05	[−30.79, −1.31]	−.09	.03
$F(15, 999) = 73.25$, $p < .001$, Adj $R^2 = .52$				

Notes. CI = confidence interval; DERS = Difficulties in Emotion Regulation Scale. Key covariates were identified as age, financial resources, and gender, based on robust evidence of group differences in stress, coping, and mental health. Models were also tested including race, ethnicity, marital status, and sexual orientation as simultaneous covariates, based on significant patterns of bivariate association (reported in Park et al., 2020). These covariates did not significantly impact model fit or coefficient interpretation and were removed from the final model.
[a] Emotion Regulation Skills taken as the inverse of the DERS total score.   [b] Peritraumatic distress was on a 0–3 scale, as originally administered.

while greater emotion regulation skills (β = −0.51, $p < .001$), social support (β = −0.22, $p < .001$), and coping involving active efforts (β = −0.21, $p < .001$), substance use (β = −0.07, $p = .048$), distraction (β = −0.13, $p < .001$), humor (β = −0.18, $p < .001$), religious coping (β = −0.24, $p < .001$), and seeking instrumental (i.e., asking for tangible help or assistance from others; β = −0.12, $p < .001$) and emotional (i.e., discussing one's feelings with others; β = −0.10, $p = .003$) support were each uniquely negatively associated with depression (Adj $R^2 = .60$, $F(15, 999) = 100.36$, $p < .001$). Stress exposure (β = 0.14, $p < .001$) and mindfulness (β = 0.12, $p < .001$) were the only significant positive predictors of anxiety symptoms, whereas older age (β = −0.08, $p = .01$), emotion regulation skills (β = −0.55, $p < .001$), social support (β = −0.07, $p = .03$), and use of active (β = −0.08, $p = .04$), distraction (β = −0.18, $p < .001$), and humor (β = −0.12, $p = .004$) coping were uniquely negatively associated with anxiety (Adj $R^2 = .42$, $F(15, 999) = 49.82$, $p < .001$). Finally, significant positive predictors of stress symptoms included female gender (β = 0.08, $p = .001$) and stress exposure (β = 0.21, $p < .001$), whereas emotion regulation skills (β = −0.53, $p < .001$), distraction (β = −0.08, $p = .03$), and religious (β = −0.09, $p = .03$) coping were significant unique negative correlates of stress (Adj $R^2 = .52$, $F(15, 999) = 73.25$, $p < .001$).

Discussion

Overall, Americans exhibited elevations in general distress similar to those seen in China in the midst of the COVID-19 outbreak. Yet, our sample appeared more distressed than participants in these studies as well as some recent studies of the MTurk worker pool (e.g., Kim & Hodgins, 2017). Noted elevations may be because of cultural differences regarding social distancing and other prevention practices, or to the fact that earlier studies (e.g., Wang et al., 2020) were conducted before the full-scale pandemic. In addition, PDI scores suggest levels comparable to those of previous studies of high magnitude trauma, with a substantial minority experiencing very high levels. Thus, our results suggest a great deal of psychological suffering, which may bode poorly for long-term mental health (Galea et al., 2020), similar to what has been observed in previous community disasters (e.g., Fergusson et al., 2014).

The transactional stress and coping framework allowed us to home in on factors that may lead to better adjustment in the midst of living in a pandemic. Similar to previous studies (e.g., Bell et al., 2017), older age and male gender were protective demographics, suggesting that younger adults and women may be more vulnerable. When all other variables were held constant, individuals with limited financial resources were still at greater risk for peritraumatic distress and depression, but not anxiety and psychological stress. We focused particularly on individuals' stress exposure, resources and coping, given that specific stress management interventions can be effectively delivered online (e.g., Heber et al., 2016). Even when self-regulation and coping resources were accounted for, higher levels of stress exposure remained uniquely associated with PTD, depression, anxiety, and stress; thus, some level of emotional reaction to COVID-19 may be inevitable in instances of very high stress exposure, even when individuals are otherwise well-equipped to manage adjustment. Psychosocial resources were also associated with less distress. In particular, in multivariate analyses, emotion regulation skills were strongly associated with less distress in all domains. Emotion regulation consistently relates to better adjustment in both acute and chronic stressful situations (Sloan et al., 2017), so its salutary relations, in the context of the high-stress pandemic, is encouraging albeit not surprising.

Although perceived social support and mindfulness related to less distress at the bivariate level, these effects weakened when considered in multivariate models including other psychosocial resources and coping as predictors. Participants' perceived social support was uniquely associated with lower depression and anxiety, but not PTD or stress levels, perhaps because of perceived social support's strong overlap with emotion regulation resources. Also unexpectedly, in multivariate analyses, mindfulness actually related to *greater* PTD and anxiety. These findings may reflect the shared variance between emotion regulation skills and mindfulness; even in bivariate associations, emotion regulation related much more strongly to distress than did mindfulness (cf. Finkelstein-Fox et al., 2018). Mindfulness has been posited to influence well-being *through* emotion regulation (e.g., Roemer et al., 2015); it may be that once the shared variance with adaptive emotion regulation is accounted for, remaining elements of mindfulness, such as pure awareness, are associated with increased attention to distress. Although some recent

research from COVID-19 participants in China found mindfulness minimally effectiveness in alleviating distress (Sweeny et al., 2020), salutary effects of mindfulness may emerge over time, particularly for individuals with limited self-regulatory resources (e.g., Finkelstein-Fox et al., 2018).

Although the present results are important in portraying Americans' early responses to the pandemic, limitations must be noted. First, we studied MTurk workers, who are not fully nationally representative (Walters et al., 2018). Results are cross-sectional in nature, and neither causal nor even temporal ordering can be inferred. Clearly, multiple assessments over a longer timeframe are needed (Bonanno et al., 2007), particularly given the rapidly changing nature of the pandemic and its implications for Americans' lives. Although we captured many constructs, many others were left out, and we used some abbreviated measures with suboptimal psychometric properties (e.g., Brief COPE; Carver, 1997). We also inadvertently excluded the response option "slightly true" for the PTD measure.

These findings suggest that interventions promoting emotion regulation and coping skills may help individuals endure lengthy periods of social isolation despite little control over many of the stressors at hand (Sloan et al., 2017). We found a wide range of coping strategies were associated with less distress. In particular, use of active coping, seeking social support, distraction, humor, religious coping and even substance use, relative to total coping expenditure (including behavioral disengagement) were associated with at least one indicator of resilient mental health. Contrary to the general coping literature, beneficial effects of emotion-focused strategies such as humor and distraction were observed and even outweighed the effects of active coping for managing COVID-19-related distress. This unusually wide array of coping related to less distress may because of individuals' needs to use a variety of strategies to deal with different demands required by different pandemic-related stressors. Many of these stressors are low in controllability (e.g., uncertainty, lack of social contact) and many strategies that may normally be used (e.g., seeking company, working out at the gym) are unavailable. Collectively, these coping activities may reflect managing one's stressful situation to the extent possible and accepting those aspects beyond control while also protecting immediate mental well-being (Finkelstein-Fox & Park, 2019). This approach, using a wide range of coping strategies simultaneously, may provide a sense of agency and alleviate feelings of helplessness in the context of an ongoing and multifaceted stressful pandemic (Aldwin, 2007).

These findings have important implications for both likely long-term mental health and potential immediate online and technology-assisted interventions. Women, younger adults, and individuals with financial strain, reporting more distress during the pandemic, may particularly benefit from remote mental health intervention. Adaptive emotion regulation and active coping, along with gradual reexposure to feared stimuli such as crowded public spaces and use of healthy distraction from ongoing worries, may serve as potent targets for remotely delivered cognitive–behavioral therapies to offset the likely rise in PTSS as the pandemic unfolds in the months ahead (e.g., Litz et al., 2007; Yuen et al., 2015). Given the likelihood of ongoing recommendations for quarantine and restrictions on in-person socialization, mental health professionals may also proactively develop and disseminate telehealth mental health first aid and provide suggested structure and content for broadly disseminated online resources. For example, practices that counter rumination and anxiety by actively redirecting attention and reframing negative interpretations could be taught (e.g., Berking et al., 2008; Sweeny, 2012). Interventions that teach discernment of controllability of stressors and implementation of appropriate strategies have been developed largely in behavioral medicine and delivered online (e.g., Cox et al., 2018); such programs could be adapted to the pandemic to help individuals implement more active coping for stressors amenable to direct change and reappraisal or distraction for those less amenable. Many mobile interventions for anxiety and stress management are already available (e.g., Christensen et al., 2014). For example, the National Center for PTSD is now disseminating a free COVID-specific stress management app, Covid Coach (National Center for PTSD, 2020).

Concurrently, policymakers can assess the equitable access to high-bandwidth technology needed to support computer-mediated resources for this mode of care delivery, taking particular care to articulate tailored outreach for vulnerable segments of their communities. Extreme social inequality, characteristics of many United States COVID-19 "hotspots" (Maroko et al., 2020), creates considerable challenges in addressing access to care (see Cockerham et al., 2017, for a comprehensive review), and in the long run, this inequality will need to be addressed to minimize the long-term harmful sequelae from this pandemic (Auerbach & Miller, 2020).

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