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Socioeconomic Status and Well-Being During COVID-19: A Resource-Based Examination

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The authors assess levels and within-person changes in psychological well-being (i.e., depressive symptoms and life satisfaction) from before to during the COVID-19 pandemic for individuals in the United States, in general and by socioeconomic status (SES). The data is from 2 surveys of 1,143 adults from RAND Corporation's nationally representative American Life Panel, the first administered between April–June, 2019 and the second during the initial peak of the pandemic in the United States in April, 2020. Depressive symptoms during the pandemic were higher than population norms before the pandemic. Depressive symptoms increased from before to during COVID-19 and life satisfaction decreased. Individuals with higher education experienced a greater increase in depressive symptoms and a greater decrease in life satisfaction from before to during COVID-19 in comparison to those with lower education. Supplemental analysis illustrates that income had a curvilinear relationship with changes in well-being, such that individuals at the highest levels of income experienced a greater decrease in life satisfaction from before to during COVID-19 than individuals with lower levels of income. We draw on conservation of resources theory and the theory of fundamental social causes to examine four key mechanisms (perceived financial resources, perceived control, interpersonal resources, and COVID-19-related knowledge/news consumption) underlying the relationship between SES and well-being during COVID-19. These resources explained changes in well-being for the sample as a whole but did not provide insight into why individuals of higher education experienced a greater decline in well-being from before to during COVID-19.

Keywords: socioeconomic status, conservation of resources, well-being, COVID-19

> "People want to talk about this virus as an equal opportunity pathogen, but it's really not," said Dr. Ashwin Vasan, a doctor and public health professor at Columbia University. "It's going right to the fissures in our society." *New York Times*, April 3, 2020.

Socioeconomic disparities across life and health outcomes are large and persistent in the United States and other developed countries (Braveman, Egerter, & Williams, 2011). Given this, the role of socioeconomic status (SES; i.e., an individual's objective social or economic position in relation to others) during the COVID-19 pandemic has been scrutinized. For example, individuals of lower SES were more likely to be frontline workers with higher potential exposure to the virus (Afridi & Block, 2020). In contrast, individuals of higher SES were more likely to be working or furloughed at home with comforts such as a well-stocked pantry, stable Internet, and spacious living arrangements (Reeves & Rothwell, 2020). Despite these differences, a national poll by Axios-Ipsos reported that 47% of Americans of higher SES indicated their emotional well-being had gotten worse because of the pandemic, compared to only 34% of lower SES individuals (Talev, 2020).

The first purpose of this study is to examine levels of psychological well-being (i.e., depressive symptoms and life satisfaction) during the COVID-19 pandemic for individuals in the United States in general and by SES. We surveyed 1,143 adults from RAND Corporation's nationally representative American Life Panel during the first U.S. peak of the pandemic in April, 2020. We compare levels of depressive symptoms during the pandemic to pre-COVID population norms (Tomitaka et al., 2018). Our second purpose is to assess within-person changes in well-being (i.e., changes in depressive symptoms and life satisfaction) from before to during the pandemic—in general and by SES. Finally, drawing upon conservation of resources theory (COR theory;

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Hobfoll, 1989, 2010) and the theory of fundamental social causes (Link & Phelan, 1995), we examine four resource-based mechanisms (perceived financial resources, perceived control, interpersonal resources, and COVID-19-related knowledge/news consumption) underlying the relationship between SES and well-being levels and changes. We operationalize SES as educational attainment and household income. These are "objective and quantifiable indicators of power, prestige, and control over resources" (Diemer, Mistry, Wadsworth, López, & Reimers, 2013, p. 84). These two distinct facets of SES have incremental predictive validity, with education being more specific to human capital and income being more specific to material capital (Oakes & Rossi, 2003).

Our study provides several contributions to the literature. Despite being fundamental aspects of work, educational attainment and income have received scarce attention in industrial-organizational psychology and management research (Côté, 2011; Leana & Meuris, 2015). We present unique nationally representative data about well-being changes from before to during COVID-19, and test mechanisms underlying differential well-being outcomes for individuals of lower and higher SES. Due to the difficulty of accessing representative samples during crises with measures for comparison before the event, most studies of crisis events include convenience samples and only postevent assessments of well-being (Norris et al., 2002). From a theoretical standpoint, our study addresses the need to better understand the pathways that affect well-being changes for individuals of lower and higher SES amid public health crises (Galama & van Kippersluis, 2019). From a practical standpoint, organizational practices can perpetuate and are also impacted by socioeconomic inequality (Bapuji, Ertug, & Shaw, 2020). It is thus informative for managerial practice to elucidate the relationship between SES, well-being, and transmitting mechanisms (Christie & Barling, 2009). Further, efforts to minimize risk for reduced well-being during the COVID-19 pandemic and future public health crises are best informed if there is an understanding of the processes that stimulate reduced well-being (Link & Phelan, 1995).

Theory and Hypothesis Development

COR theory is a leading psychological theory of stress and trauma (Hobfoll, Tirone, Holmgreen, & Gerhart, 2016). According to the theory, humans acquire and safeguard resources to protect themselves and to ease the challenges of daily life. Resources include valued conditions or situations, personal resources such as self-efficacy, and material or energy resources such as money (Hobfoll, 1989). A first tenet of this theory suggests that when individuals lose or fear losing valued resources, well-being is negatively affected (Hobfoll, 1989, 2010). This reduction in well-being stems from both the instrumental and symbolic value of the lost resources.

COVID-19, recognized as a worldwide pandemic by the World Health Organization (WHO) on March 11, 2020, was associated with myriad resource losses for individuals. Millions of employees were furloughed or laid off from their jobs, or began working under new conditions at home or on site. Childcare center and school closures changed family routines. Supply chain interruptions reduced the availability of everyday supplies. Services, such as grooming, physical therapy, public transportation, and many entertainment options became unavailable or limited. Individuals were isolated from friends and family. Stock markets plummeted in late March, 2020, producing financial loss and fear of further loss.

Consistent with COR theory, mental health concerns have been documented in countries that experienced the COVID-19 outbreak before the United States (Qiu et al., 2020). For example, of 52,730 individuals surveyed in China during the pandemic, 35% indicated experiencing psychological distress (Qiu et al., 2020). Another study from China reported that the prevalence of depression was 14.6% in a convenience sample (Lei et al., 2020). While such data is informative, within-person comparisons of well-being from before to during COVID-19 are required to assess whether well-being levels have decreased and the effect size of this decrease. In addition to comparing levels of depressive symptoms during the pandemic in the United States to established norms, we also examine within-person changes in both depressive symptoms and life satisfaction from before to during the pandemic. We propose:

> *Hypothesis 1:* Depressive symptoms assessed during the pandemic will be significantly higher than previous population norms.

> *Hypothesis 2:* Individuals will portray (a) an increase in depressive symptoms and (b) a decrease in life satisfaction from before to during the pandemic.

SES and Well-Being During the Pandemic

According to COR theory, SES is fundamentally linked to the availability of resources (Hobfoll, 2010). Individuals with higher education and income have more resources and are better able to protect the resources they have (Hobfoll, 2010). In contrast, low SES makes it difficult to garner resources, even obstructing the protection of one's resources. Consistent with the COR theory premise that people with fewer resources will have lower psychological health, lower SES is associated with more depression (Lorant et al., 2003; Wang, Schmitz, & Dewa, 2010) and lower life satisfaction (Pinquart & Sörensen, 2000).

The theory of fundamental social causes specifies that the role of SES in health is so robust and enduring that it is imperative to examine SES inequities and the mechanisms behind these inequities (Phelan, Link, & Tehranifar, 2010). While many resources fit under the umbrella of COR theory, the theory of fundamental social causes identifies four key resources underlying SES inequities (Link & Phelan, 1995). First, *perceived financial resources* refer to perceived fit between accessible material resources and financial needs and wants (Meuris & Leana, 2018). In general, individuals of lower SES worry more about their financial situation and feel more overwhelmed by their financial obligations than individuals of higher SES (Link & Phelan, 1995). Yet, the same level of income may indicate comfort for one and discomfort for another, stemming from divergent financial responsibilities or expenditures (Leana & Meuris, 2015). Second, SES is related to lower levels of power. While power broadly refers to the ability to administer outcomes such as rewards and punishment (Hinkin & Schriesheim, 1989; Raven, 1993), SES is especially related to *perceived control* over life outcomes, with low SES typically signifying "a sense that one's actions are chronically influenced by external forces outside of one's individual control and influence" (Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012, p.

549). Resources and contexts accompanying lower SES result in more disruption to both perceived and actual control over life constraints (Kraus et al., 2012). Third, *interpersonal resources* refer to having higher levels of social support, social integration, or connectedness (Link & Phelan, 1995). Lower SES is related to smaller social networks and more social isolation and loneliness (Algren et al., 2020; House, Umberson, & Landis, 1988). Lastly, *knowledge* refers to possessing facts or information that allow an accurate awareness of a topic. In general, individuals of lower SES have less health-related knowledge (Phelan et al., 2010). Supporting this idea, research early in the COVID-19 crisis found lower COVID-related knowledge among individuals of lower SES (Cutler, Stantcheva, Alsan, & Yang, 2020).

Each of these resources is important to the maintenance of well-being. Specifically, individuals with lower perceived financial resources have lower levels of mental health and life satisfaction stemming from deleterious cognitive energy devoted to fear and discontent about their situation (Meuris & Leana, 2018). Lower sense of control is related to lower well-being because individuals feel powerless about their decisions and influence over others (Anderson, Kraus, Galinsky, & Keltner, 2012; Cheng, Cheung, Chio, & Chan, 2013). With respect to interpersonal resources, social isolation—which can contribute to individuals feeling a lack of support and interpersonal connections—has been associated with risk of depressive symptoms (Teo, Choi, & Valenstein, 2013). Knowledge has been shown to be related to higher levels of physical health—individuals with more health-related knowledge know how to stay healthy (Phelan et al., 2010). The relationship between knowledge and psychological well-being is more ambiguous. In the case of COVID-19, there have been indications that higher satisfaction with knowledge about the virus is related to lower depression (Wang et al., 2020), perhaps because individuals feel efficacious about precautionary measures. Higher consumption of news during a pandemic may reduce psychological well-being, however, perhaps because it amplifies fear and awareness of suffering (Ornell, Schuch, Sordi, & Kessler, 2020). Indeed, the WHO urged individuals to "minimize watching, reading, or listening to news about COVID-19 that causes you to feel anxious or distressed" (WHO, 2020, p.1). We posit:

> *Hypothesis 3:* SES will be (a) negatively associated with depressive symptoms and (b) positively associated with life satisfaction during the pandemic.

> *Hypothesis 4:* SES will be positively associated with (a) perceived financial resources, (b) perceived control, (c) interpersonal resources, and (d) COVID-related knowledge and news consumption during the pandemic. These resources will mediate the relationship between SES and depressive symptoms and life satisfaction during the pandemic.

SES and Changes of Well-Being From Before to During COVID-19

The previous hypotheses do not address whether or how well-being might differentially change for individuals of lower and higher SES from before to during COVID-19. Another aspect of COR theory suggests individuals of lower SES may be more likely to experience a greater decline in well-being during a crisis event in comparison to those of higher SES. Specifically, COR theory suggests that individuals with compromised resources are most vulnerable to additional resource loss. In contrast, individuals with higher SES are more likely to have plentiful resource caravans that can be drawn upon to stave off negative emotions and cognitions, and assist overall coping (Hobfoll, 2010). While few studies have examined SES and well-being in the context of crises with pre and post measures (Norris et al., 2002), a few studies support the premise that people with lower SES have the largest decrease in well-being after a crisis (Ginexi, Weihs, Simmens, & Hoyt, 2000; Phifer, 1990). For example, following the 1984 Kentucky flood, individuals of lower SES reported greater increases in depression and anxiety (Phifer, 1990).

In contrast to these findings, as mentioned in our opening paragraph, a nationally representative survey of 1,355 U.S. adults early in the pandemic found that more individuals of higher SES indicated their emotional well-being had gotten worse than individuals of lower SES (Talev, 2020). Although counterintuitive, situationally specific lower well-being among individuals who typically have more resources is also acknowledged by COR theory. Reduced well-being depends on how one's unique resources contract in a specific situation (Hobfoll, 2010; Hobfoll, Johnson, Ennis, & Jackson, 2003). It is possible that loss of resources during COVID-19 may have occurred differentially for individuals of higher and lower SES. For example, higher SES could have been associated with greater loss of interpersonal resources, given that individuals of higher SES were more likely to be newly working at home during the pandemic than those of lower SES. Or, given individuals lower in SES already tend to have low perceived control, individuals of higher SES may have had a relatively bigger drop in perceived control due to COVID-19-related uncertainties. Considering the above, we propose the following competing hypotheses:

> *Hypothesis 5a:* There will be a larger increase in depressive symptoms and a larger decrease in life satisfaction from before to during COVID-19 for lower (vs. higher) SES individuals.

> *Hypothesis 5b:* There will be a larger increase in depressive symptoms and a larger decrease in life satisfaction from before to during COVID-19 for higher (vs. lower) SES individuals.

Only limited research has empirically examined the role of differential resource loss in explaining SES differences in well-being change (Kiviruusu, Huurre, Haukkala, & Aro, 2013). A given crisis can affect resources differentially for individuals of higher and lower SES (Warr & Aung, 2019). Data available from a previous assessment of the American Life Panel allowed us to assess actual changes from before to during COVID-19 in two of the resources central to our theorizing: perceived control and interpersonal resources (Link & Phelan, 1995). We examine whether decreases in perceived control and interpersonal resources mediate the relationship between SES and changes in well-being. We also examine whether lower levels of the other resources during COVID-19 (perceived financial resources, COVID-related knowledge, and COVID-related news consumption) explain changes in well-being. Based on the components of both COR theory and the theory of fundamental social causes, we propose:

> *Hypothesis 6:* Declines in (a) perceived control and (b) interpersonal resources as well as levels of (c) perceived financial

Table 1
Demographic Characteristics of Participants (N = 1,143)

Characteristic	*n*	%
Age		
30–39	130	11.4
40–49	181	15.8
50–59	215	18.8
60–69	296	25.9
70–79	293	25.6
80–81	28	2.5
Gender		
Male	508	44.4
Female	635	55.6
Racioethnicity		
Non-Hispanic White	841	73.6
Non-Hispanic Black	108	9.4
Hispanic	137	12.0
Asian or Pacific Islander	34	3.0
Other	23	2.0
Employment status in April 2020		
Unemployed and looking for work prior to COVID-19	21	1.8
Full-time employee	396	34.6
Part-time employee	60	5.2
Laid off due to COVID-19	40	3.5
Furloughed due to COVID-19	32	2.8
Freelancing or self-employed	79	6.9
Disabled	59	5.2
Retired	371	32.5
Homemaker	42	3.7
Other	43	3.8
Household income reported in 2020		
Less than $5,000	19	1.7
$5,000 to $7,499	8	0.7
$7,500 to $9,999	16	1.4
$10,000 to $12,499	17	1.5
$12,500 to $14,999	16	1.4
$15,000 to $19,999	38	3.3
$20,000 to $24,999	46	4.0
$25,000 to $29,999	53	4.6
$30,000 to $34,999	59	5.2
$35,000 to $39,999	42	3.7
$40,000 to $49,999	93	8.1
$50,000 to $59,999	101	8.8
$60,000 to $74,999	156	13.6
$75,000 to $99,999	134	11.7
$100,000 to $124,999	122	10.7
$125,000 to $199,999	139	12.2
$200,000 or more	81	7.1
Education		
Less than high school	5	.4
Some high school, no diploma	29	2.5
High school graduate or equivalent	117	10.2
Some college, no degree	219	19.2
Associate degree	152	13.3
Bachelor's degree	333	29.1
Master's degree	204	17.8
Professional school degree	41	3.6
Doctorate degree	43	3.8

Note. Frequencies listed in this table are unweighted. Household income does not total to 1,143 due to missing responses. Respondents were or had previously been employed (e.g., retired, unemployed) in a wide range of occupations, with the three most frequent being education (14%), managerial (10%), and office and administrative (9%).

resources and (d) COVID-related knowledge and COVID-related news consumption will mediate the relationship between SES and changes in depressive symptoms and life satisfaction from before to during the pandemic.

Method

Participants and Procedure

We surveyed the RAND American Life Panel (ALP; Pollard & Baird, 2017), a probability-sample based, nationally representative sample. Time 1 (T1) of our study took place before COVID-19 in April–June, 2019 ("Adult Social Networks and Well Being," RAND Corporation IRB # 2017–1022), which focused on U.S. adults between ages 30 and 80. The before-COVID-19 data was collected as part of a larger ongoing longitudinal study and the present article is the first being published from this broader database. Time 2 (T2) data was collected April 16–19, 2020 ("Stressors and strains at work and home during the Corona virus pandemic," University of Minnesota IRB # 00009402), during the first estimated 2020 peak of the pandemic in the United States as measured by deaths per day and hospital resource use (IHME, 2020). Perceived control, interpersonal resources, depressive symptoms, and life satisfaction were assessed at both T1 and T2. Perceived financial resources, COVID-related knowledge, and COVID-related news consumption were assessed at T2 and were not available at T1. ALP panelists are invited to update demographic and general health status three times a year. An invitation to our study was sent to 1,771 panelists who completed the T1 survey; 1,143 responded (64.5%).[1] Demographic data for the sample is shown in Table 1.

Measures

The complete list of items in each measure is included in the Appendix. *Socioeconomic status* was measured with (a) educational attainment assessed in early 2020 and (b) annual household income assessed in 2019 and 2020, averaged across these two assessments. Respondents reported their highest level of education on a 9-point scale (1 = *less than high school,* 9 = *doctorate degree*). There was a .98 and above correlation between education used in our analyses and four previous measurements, providing evidence for the reliability of this measure in this sample. Household income represents the total combined income of all family members 15 years or older who lived in the household over the past year on a 17-point scale (1 = *less than $5,000*, 17 = *$200,000 or above*). Combining multiple recent years of household income is recommended because household income can change from year to year, especially for individuals of lower SES (Diemer et al., 2013).[2]

Perceived financial resources were measured by four items (Meuris & Leana, 2018) on a 5-point scale (1 = *never* to 5 = *always*). Higher scores reflect more satisfaction with, and less worry about, one's financial resources. Perceived control was measured with seven items (Lachman & Weaver, 1998) on a 4-point scale (1 = *strongly disagree*

[1] Respondents and nonrespondents did not significantly differ in general health status, education, and income. Respondents were older and were more likely to be male and non-Hispanic White. Sampling weights were included to adjust for differences between our sample and the general population, and age, gender, and racioethnicity are included in analyses as covariates.

[2] Some researchers use occupational prestige as an index of SES among working samples. Among our participants working full or part time in early 2020, Nam-Powers-Boyd occupational prestige scale scores (Boyd & Nam, 2015) were highly correlated with education ($r = .51$, $p < .01$) and income ($r = .58$, $p < .01$).

Table 2
Means, Standard Deviations, Bivariate Correlations, and Cronbach's Alpha Coefficients of Study Variables

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Gender (0 = *male*, 1 = *female*)	.52	.50	—																			
2. Non-Hispanic Black (0 = *no*, 1 = *yes*)	.09	.28	.09**	—																		
3. Hispanic (0 = *no*, 1 = *yes*)	.24	.42	−.01	−.17**	—																	
4. Asian/Pacific Islander (0 = *no*, 1 = *yes*)	.04	.19	−.10**	−.06*	−.11**	—																
5. Other racioethnicity (0 = *no*, 1 = *yes*)	.02	.14	.02	−.05	−.08**	−.03	—															
6. Age	53.27	13.67	.03	−.01	−.35**	−.10**	−.03	—														
7. General health status	3.44	.94	.00	−.09**	−.18**	.08*	−.07*	.02	—													
8. Education	4.57	1.81	.03	−.04	−.19**	.15**	−.04	.00	.27**	—												
9. Income	11.77	3.96	−.13**	−.20**	−.18**	.11**	−.08**	.05	.28**	.45**	—											
10. Perceived financial resources during COVID	3.36	.96	−.06	−.07*	−.20**	.09**	−.03	.27**	.31**	.24**	.37**	(.87)										
11. Perceived control pre-COVID	3.08	.56	.00	.04	−.05	−.05	.01	.16**	.27**	.14**	.20**	.34**	(.81)									
12. Perceived control during COVID	3.02	.54	−.08*	.00	−.08**	−.05	.01	.17**	.33**	.10*	.19**	.45**	.63**	(.83)								
13. Interpersonal resources pre-COVID	2.45	.59	−.03	−.07*	−.07*	.00	.01	.18**	.27**	.05	.20**	.36**	.49**	.47**	(.82)							
14. Interpersonal resources during COVID	2.33	.61	−.07*	.04	−.05	−.02	.00	.12**	.15**	.01	.13**	.32**	.27**	.43**	.42**	(.83)						
15. COVID-related knowledge	3.79	.95	.03	−.08*	−.25**	−.02	−.07*	.31**	.12**	.18**	.15**	.14**	.13**	.16**	.06*	−.01	—					
16. COVID-related news consumption	4.19	.93	.03	.05	−.17**	−.17**	−.09**	.19**	−.02	.11**	.15**	−.05	.08*	.05	.01	.01	.37**	—				
17. Depressive symptoms pre-COVID	4.18	4.60	.06*	−.01	.14**	−.07*	.03	−.22**	−.40**	−.11**	−.17**	−.39**	−.49**	−.52**	−.54**	−.26**	−.09*	.06*	(.89)			
18. Depressive symptoms during COVID	4.77	4.83	.07*	−.01	.13**	−.02	−.03	−.25**	−.37**	−.02	−.14**	−.47**	−.37**	−.54**	−.43**	−.54**	−.08*	.06	.56**	(.89)		
19. Life satisfaction pre-COVID	7.76	1.79	−.01	.06*	−.10**	.01	.01	.14**	.41**	.07*	.18**	.33**	.43**	.41**	.46**	.27**	−.03	−.01	−.50**	−.38**	—	
20. Life satisfaction during COVID	7.10	1.90	−.11**	.04	.00	.03	.03	.19**	.33**	−.04	.11**	.48**	.39**	.55**	.44**	.44**	.05	−.10*	−.48**	−.59**	.57**	—

Note. N = 1,117–1,143. Racioethnicity is coded as four dummy variables with non-Hispanic White as the referent. Following convention for the PHQ-8 instrument, depressive symptoms are operationalized as the sum of all item scores. Cronbach's alpha coefficients are reported inside the parentheses along the diagonal.
* $p < .05$. ** $p < .01$.

to 4 = *strongly agree*). Interpersonal resources were assessed with three items from the revised UCLA Loneliness Scale (Hughes, Waite, Hawkley, & Cacioppo, 2004) on a 3-point scale (1 = *hardly ever* to 3 = *often*). This scale is strongly correlated with a longer version (r = .82; Hughes et al., 2004). Higher scores reflect more interpersonal resources. COVID-related knowledge (1 = *not at all knowledgeable* to 5 = *extremely knowledgeable* for knowledge) and news consumption (1 = *never* to 5 = *a great deal*) were assessed with single items on 5-point scales.

Depressive symptoms were measured by the Patient Health Questionnaire (PHQ-8; Kroenke et al., 2009), on a 4-point scale (0 = *not at all* to 3 = *nearly every day*). The sum of item responses indicates the overall level of depressive symptoms. The PHQ-8 has a high 48-hr test–retest reliability and construct validity as a diagnostic measure (Kroenke, Spitzer, & Williams, 2001; Kroenke et al., 2009). Life satisfaction was assessed with a single item (1 = *very dissatisfied* to 10 = *very satisfied*; Kobau, Sniezek, Zack, Lucas, & Burns, 2010). This item is strongly correlated (r = .75; Kobau et al., 2010) with the multi-item Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985).

Control variables included age, racioethnicity (four dummy variables with non-Hispanic White as the referent category, compared to non-Hispanic Black, Hispanic, Asian or Pacific Islander, and Others; 0 = *no*, 1 = *yes*), gender (0 = *male*, 1 = *female*), and general health status (1 = *poor* to 5 = *excellent*). Age and general health status were controlled because they are risk factors for COVID-19 (Bhargava et al., 2020; Mayo Clinic, 2020). Racioethnicity was controlled because racial disparities exist in health outcomes above and beyond SES differences (House & Williams, 2000). We controlled for gender because meta-analytic findings suggest there are more depressive symptoms among women than men (d = 0.27; Salk, Hyde, & Abramson, 2017).[3]

Analytic Strategy

Weights were incorporated in the estimation of coefficients and standard errors (*SE*s) in order to account for sampling bias (Asparouhov, 2005).[4] We tested Hypothesis 1 (H1) using a one-sample t test and Hypothesis 2 (H2) using a paired-sample t test, with SPSS Version 24. To test Hypothesis 3 (H3) and Hypothesis 4 (H4) we used structural equation modeling (SEM). To test Hypothesis 5 (H5) and Hypothesis 6 (H6), we used latent change score (LCS) modeling. In analyses for H3–H6 latent factors were specified for multiple-indicator variables (see McArdle, 2009) and the analyses were conducted in Mplus Version 8.3 (Muthén & Muthén, 2017). We used the Monte Carlo method to construct 95% confidence intervals (CIs) of indirect and total effects in R Version 4.0.0 using the Modern Applied Statistics with S (MASS)

[3] When control variables are removed, results are all consistent except for the effect of income on COVID-related news consumption and the direct effect of education on depressive symptoms, which were not significant. Detailed results are available on this study's OSF site (https://doi.org/10.17605/OSF.IO/ARZF4).

[4] Sampling weights are provided by RAND to match the sample to the U.S. population in multiple demographic characteristics based on data from the Current Population Survey Annual Social and Economic Supplement (administered in March of each year). See technical details of the weighting procedure in Pollard and Baird (2017).

Table 3
Item-Level Comparisons on Patient Health Questionnaire (Depressive Symptoms) to Previous Population Norms

Item	Present sample (N = 1,141–1,143)	Comparison sample (N = 5,924)	One-sample t-test results
1. Little interest or pleasure in doing things	.67 (.82)	.40	11.00**
2. Feeling down, depressed, or hopeless	.57 (.75)	.35	9.94**
3. Trouble falling or staying asleep, or sleeping too much	.85 (.93)	.62	8.23**
4. Feeling tired or having little energy	.89 (.89)	.77	4.53**
5. Poor appetite or overeating	.76 (.97)	.40	12.68**
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	.41 (.72)	.26	6.93**
7. Trouble concentrating on things, such as reading the newspaper or watching television	.43 (.73)	.19	10.95**
8. Moving or speaking so slowly that other people could have noticed? Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual	.21 (.57)	.18	1.60
Total scale	4.77 (4.83)	3.16	11.28**

Note. Each item is answered on a 4-point scale (0 = *not at all* to 3 = *nearly every day*). Higher scores indicate higher levels of depressive symptoms. Under the "Present sample" column, weighted means are reported with *SD*s listed inside the parentheses. N = 1,141 for Item 4 and N = 1,143 for the other items. Comparison sample taken from Tomitaka et al. (2018).
** $p < .01$, two-tailed tests.

package (Venables & Ripley, 2002).[5] Complete responses were provided by 1,117 (98%) respondents. Following Newman (2014), we used maximum likelihood estimation to treat missing data, which also allowed us to utilize the sampling weights.

Results

Preliminary Analyses Results

Means, standard deviations (*SD*s), correlations, and alphas for study variables are shown in Table 2. For the repeatedly measured multiple-item scales (i.e., perceived control, interpersonal resources, and depressive symptoms), a confirmatory factor analysis model with time-varying factor loadings did not fit the data significantly better than a model with fixed factor loadings (Satorra-Bentler scaled $\Delta\chi^2 = 22.16$, $\Delta df = 15$, $p > .05$), supporting measurement equivalence of these scales at T1 and T2.

H1 and H2 Results

Using population norms from Tomitaka et al. (2018), one-sample t test results showed that depressive symptoms during the COVID-19 pandemic ($M = 4.77$, $SD = 4.83$) were higher than population norms before the pandemic ($M = 3.16$; $t = 11.28$, $df = 1142$, $p < .01$, Cohen's $d = .33$; see Table 3). Therefore, H1 was supported. Using a paired-sample t test, results showed that depressive symptoms increased from before ($M = 4.18$, $SD = 4.60$) to during COVID-19 ($M = 4.77$, $SD = 4.83$; $t = 4.55$, $df = 1142$, $p < .01$, Cohen's $d = .13$), supporting H2a. Life satisfaction decreased from before ($M = 7.76$, $SD = 1.79$) to during COVID-19 ($M = 7.12$, $SD = 1.90$; $t = 12.52$, $df = 1115$, $p < .01$, Cohen's $d = .38$), supporting H2b.

H3 and H4 Results

We specified a model that included the effects of education and income on the mediators, which in turn had effects on depressive symptoms and life satisfaction during COVID-19. As reported in Table 4, the model explained 62% and 49% of the variance in depressive symptoms and life satisfaction during COVID-19, respectively. Estimates of indirect effects (to test H4) and total effects (to test H3) are reported in Table 5. In contrast to expectations for H3, education had a positive, rather than negative, total effect on depressive symptoms during COVID-19 (total effect = .040, 95% CI [.022, .060]; H3a) and a negative, rather than positive, total effect on life satisfaction during COVID-19 (total effect = −.169, 95% CI [−.221, −.116]; H3b). Consistent with expectations for H3, income had a negative total effect on depressive symptoms (total effect = −.014, 95% CI [−.026, −.002]; H3a) and a positive total effect on life satisfaction (total effect = .055, 95% CI [.024, .086]; H3b). With regard to H4, education was positively related to COVID-related knowledge ($\beta = .07$, $SE = .03$, $p < .01$), but COVID-related knowledge was not a significant mediator of the relationships between education and depressive symptoms and life satisfaction (see Table 5). Income was positively related to perceived financial resources ($\beta = .06$, $SE = .01$, $p < .01$), perceived control ($\beta = .01$, $SE = .00$, $p < .05$), interpersonal resources ($\beta = .02$, $SE = .01$, $p < .05$), and COVID-related news consumption ($\beta = .03$, $SE = .01$, $p < .05$). Each of these resources mediated the relationship between income and depressive symptoms and life satisfaction during COVID-19 (see Table 5). Overall, H4a–d received partial support with regard to income but not education.

[5] Maximum likelihood estimation with robust standard errors (MLR) was used to incorporate weights into our analyses. The MLR method is not compatible with bootstrapping by resampling cases (which is the default bootstrapping procedure in Mplus). Therefore, we used the Monte Carlo method, which resamples estimates of parameters from sampling distributions, to construct 95% CIs of indirect and total effects (MacKinnon, Lockwood, & Williams, 2004).

Table 4
Estimates of Unstandardized Structural Path Coefficients Predicting Well-Being During COVID-19

Predictor	Perceived financial resources during COVID	Perceived control during COVID	Interpersonal resources during COVID	COVID-related knowledge	COVID-related news consumption	Depressive symptoms during COVID	Life satisfaction during COVID
Intercept	—	—	—	3.89 (.08)**	4.28 (.08)**	—	6.99 (.13)**
Control variables							
Gender (0 = *male*, 1 = *female*)	−.05 (.07)	−.03 (.02)	−.07 (.05)	.06 (.08)	.05 (.08)	.01 (.04)	−.22 (.13)
Non-Hispanic Black (0 = *no*, 1 = *yes*)	.00 (.11)	.06 (.03)*	.19 (.08)*	−.31 (.15)*	.09 (.13)	−.04 (.07)	.61 (.19)**
Hispanic (0 = *no*, 1 = *yes*)	−.04 (.11)	.02 (.03)	.05 (.09)	−.34 (.13)**	−.30 (.13)*	−.02 (.07)	.69 (.19)**
Asian/Pacific Islander (0 = *no*, 1 = *yes*)	.24 (.17)	−.07 (.05)	−.07 (.15)	−.19 (.15)	−.95 (.47)*	−.15 (.11)	.52 (.38)
Other racioethnicity (0 = *no*, 1 = *yes*)	.13 (.13)	.10 (.07)	.14 (.18)	−.47 (.25)	−.62 (.23)**	−.17 (.11)	.68 (.35)*
Age	.02 (.00)**	.003 (.00)**	.01 (.00)**	.02 (.00)**	.01 (.00)*	−.01 (.00)**	.01 (.01)**
General health status	.19 (.04)**	.07 (.02)**	.10 (.03)**	.04 (.05)	−.10 (.05)*	−.14 (.03)**	.39 (.08)**
SES							
Education	.03 (.02)	.00 (.01)	−.03 (.02)	.07 (.03)**	.04 (.04)	.03 (.01)*	−.15 (.04)**
Income	.06 (.01)**	.01 (.00)*	.02 (.01)*	.01 (.01)	.03 (.01)*	.01 (.01)	−.01 (.02)
Mediators							
Perceived financial resources during COVID						−.12 (.04)**	.53 (.12)**
Perceived control during COVID						−.99 (.37)**	2.97 (.78)**
Interpersonal resources during COVID						−.42 (.06)**	.71 (.15)**
COVID-related knowledge						−.01 (.02)	.04 (.08)
COVID-related news consumption						.05 (.03)*	−.16 (.08)*
Residual variances	.45 (.06)**	.03 (.01)*	.29 (.03)**	.75 (.05)**	.76 (.05)**	.15 (.02)**	1.83 (.12)**
R^2	.30	.22	.08	.16	.12	.62	.49

Note. $N = 1{,}143$. SES = socioeconomic status. Racioethnicity is coded as four dummy variables with non-Hispanic White as the referent category. Age, general health status, education, and income were mean centered. *SE*s are reported inside the parentheses. When only education was included as a predictor, it had significant positive effects on perceived financial resources during COVID, COVID-related knowledge, COVID-related news consumption, and depressive symptoms during COVID, and a significant negative effect on life satisfaction during COVID. When only income was included as a predictor, it had significant positive effects on perceived financial resources during COVID, perceived control during COVID, interpersonal resources during COVID, and COVID-related news consumption, and a significant negative effect on life satisfaction during COVID. All the effects of the mediators on the outcomes remained the same in these alternative models.
* $p < .05$. ** $p < .01$, two-tailed tests.

H5 and H6 Results

We specified a LCS model including the effects of education and income on perceived financial resources during COVID-19, change in perceived control and interpersonal resources, and COVID-related knowledge and news consumption, which in turn had effects on changes in depressive symptoms and life satisfaction. As shown in Table 6, the model explained 28% and 21% of the variance in changes in depressive symptoms and life satisfaction, respectively. A latent change score represents the difference between T1 and T2 (T2 = T1 + change).[6] A positive (negative) coefficient of a predictor on a latent change score means a higher level of the predictor is associated with a larger increase (decrease) in the outcome.

Estimates of indirect effects (to test H6) and total effects (to test H5) of education and income on changes in depressive symptoms and life satisfaction are reported in Table 7. Of our competing hypotheses, H5a was not supported. In partial support of H5b, individuals with higher (vs. lower) education reported a larger increase in depressive symptoms (total effect = .032, 95% CI [.014, .049]) and a larger decrease in life satisfaction (total effect = −.094, 95% CI [−.137, −.042]) from before to during COVID-19. Income did not have significant total effects on changes in depressive symptoms or life satisfaction. Among the mediators hypothesized in H6, three had significant effects (see Table 7). Mediated by COVID-related knowledge, higher education was associated with a larger increase in life satisfaction (H6d), although overall higher education was associated with a larger decrease in life satisfaction. Mediated by perceived financial resources, higher income was associated with a larger increase in life satisfaction (H6c). However, mediated by COVID-related news consumption, higher income was associated with a larger decrease in life satisfaction (H6d). In other words, these two mediators of income operated in opposite directions, with financial resources contributing to an increase and COVID-related news consumption contributing to a decrease in life satisfaction.

Additional Findings

First, results from the null LCS model for within-person changes in well-being show additional support for H2. There was a significant increase in depressive symptoms ($\alpha = .09$, $SE = .03$, $p < .01$) and a significant decrease in life satisfaction ($\alpha = -.65$, $SE = .08$, $p < .01$) from before to during COVID-19. Second, while changes in resources did not substantially explain the differences in well-being change for individuals of higher and lower SES, they did for the sample in general (see Table 6). For example, individuals who experienced a reduction in perceived control and interpersonal resources experienced a larger increase in depressive

[6] Detailed model specification is provided on this study's OSF site.

Table 5
Indirect Effects, Direct Effects, and Total Effects Between SES and Well-Being During COVID-19

Predictor	Outcome	Indirect effect via . . .					Direct effect	Total effect
		Perceived financial resources during COVID	Perceived control during COVID	Interpersonal resources during COVID	COVID-related knowledge	COVID-related news consumption		
Education	Depressive symptoms during COVID	−.003 [−.010, .002]	.003 [−.009, .016]	.011 [−.001, .023]	−.001 [−.004, .003]	.002 [−.002, .008]	**.029 [.005, .053]**	**.040 [.022, .060]**
Income	Depressive symptoms during COVID	**−.007 [−.012, −.002]**	**−.009 [−.018, −.001]**	**−.009 [−.017, −.002]**	.000 [−.001, .001]	**.002 [.000, .004]**[a]	.009 [−.006, .024]	**−.014 [−.026, −.002]**
Education	Life satisfaction during COVID	.015 [−.009, .043]	−.010 [−.045, .026]	−.018 [−.043, .002]	.003 [−.008, .017]	−.006 [−.024, .004]	**−.153 [−.223, −.083]**	**−.169 [−.221, −.116]**
Income	Life satisfaction during COVID	**.030 [.015, .048]**	**.027 [.006, .047]**	**.016 [.003, .033]**	.000 [−.002, .003]	**−.005 [−.013, .000]**[b]	−.012 [−.053, .029]	**.055 [.024, .086]**

Note. 95% CIs are reported inside the brackets. 95% CIs that excluded zero are bolded. 20,000 replications were used in the Monte Carlo procedure. SES = socioeconomic status.
[a] The lower limit of this 95% CI was .00004 (with the 90% CI lower limit being .002). The 95% CI therefore did not include zero. [b] The upper limit of this 95% CI was −.000004 (with the 90% CI upper limit being −.001). The 95% CI therefore did not include zero. We interpret these indirect effects as statistically significant, although we encourage future research to further examine the robustness of these effects.

symptoms. Finally, as a supplemental analysis we examined the quadratic effects of education and income on the mediators and well-being. As shown in Figures 1 and 2, we found a significant curvilinear relationship between education and depressive symptoms during COVID-19 ($\beta = -.01$, $SE = .01$, $p < .05$), and between income and change in life satisfaction from before to during COVID-19 ($\beta = -.01$, $SE = .00$, $p < .01$). Figure 2 portrays alternative support for H5b, for income. Education and income did not have significant curvilinear effects on the mediators. Full tables for the results in Figures 1 and 2 are hosted on the Open Science Framework platform available at https://doi.org/10.17605/OSF.IO/ARZF4.

Discussion

A nationally representative sample in the United States displayed an increase in depressive symptoms and a decrease in life satisfaction from before to during COVID-19. Levels of depressive symptoms during COVID-19 were also higher than previously established norms (Tomitaka et al., 2018).

Contributing to the important goal of illustrating how the pandemic is affecting individuals of lower and higher SES, our study showed that during the first peak of the pandemic in the United States, higher education was positively associated with depressive symptoms and negatively associated with life satisfaction. This was contrary to expectations because individuals with lower SES generally have lower well-being. Consistent with expectations, higher income was associated with lower depressive symptoms and higher life satisfaction during the pandemic.

Assessment of change from before to during the pandemic is important to diagnose how the pandemic affected well-being. Individuals with higher education experienced a greater increase in depressive symptoms and a greater decrease in life satisfaction from before to during COVID-19 than individuals with lower education. Income did not have linear relationship with changes in well-being, but supplemental analysis supported a curvilinear relationship showing that individuals at higher levels of income experienced a greater decrease in life satisfaction from before to during COVID-19 than individuals with lower levels of income (see Figure 2).

These findings provide a partial replication of the Axios-Ipsos poll, which indicated that in the United States, a higher proportion of higher SES individuals reported a decline in their emotional well-being due to the pandemic than those of lower SES (Talev, 2020). A major difference between our study and the Axios-Ipsos poll (beyond our use of comparison data from before the pandemic) is their use of an income and education composite to index SES. Income and education capture different parts of SES and can result in divergent empirical findings (e.g., Christie & Barling, 2009; DeGarmo, Forgatch, & Martinez, 1999), which we also reveal in this study.

We examined four resource-based mechanisms to try to explain how SES may transmit to lower and reduced well-being. Tested mediators did not provide good explanatory value, especially for the effect of education. The one significant mediator, COVID-related knowledge, contributed to an increase in life satisfaction from before to during COVID-19, rather than a decrease. As such, COVID-related knowledge was not a valuable explanatory mech-

Table 6
Estimates of Unstandardized Structural Path Coefficients Predicting Change in Well-Being

Predictor	Perceived financial resources during COVID	Change in perceived control	Change in interpersonal resources	COVID-related knowledge	COVID-related news consumption	Change in depressive symptoms	Change in life satisfaction
Intercept	—	.01 (.04)	−.06 (.07)	3.89 (.08)**	4.28 (.08)**	.08 (.04)	−.60 (.15)**
Control variables							
Gender (0 = *male*, 1 = *female*)	−.05 (.07)	−.08 (.05)	−.05 (.06)	.06 (.08)	.05 (.08)	−.04 (.05)	−.26 (.14)
Non-Hispanic Black (0 = *no*, 1 = *yes*)	.00 (.11)	−.09 (.08)	.19 (.09)*	−.31 (.15)*	.09 (.13)	.02 (.08)	.15 (.20)
Hispanic (0 = *no*, 1 = *yes*)	−.04 (.11)	−.07 (.07)	−.07 (.10)	−.34 (.13)**	−.30 (.13)*	−.06 (.08)	.70 (.25)**
Asian/Pacific Islander (0 = *no*, 1 = *yes*)	.24 (.17)	−.02 (.12)	−.10 (.14)	−.19 (.15)	−.95 (.47)*	.02 (.10)	.28 (.31)
Other racioethnicity (0 = *no*, 1 = *yes*)	.13 (.13)	−.05 (.11)	−.04 (.24)	−.47 (.25)	−.62 (.23)**	−.27 (.13)*	.37 (.24)
Age	.02 (.00)**	.00 (.00)	.00 (.00)	.02 (.00)**	.01 (.00)*	.00 (.00)	.00 (.01)
General health status	.19 (.04)**	.03 (.02)	−.06 (.04)	.04 (.05)	−.10 (.05)*	−.01 (.03)	−.13 (.07)
SES							
Education	.03 (.02)	−.02 (.02)	.00 (.02)	.07 (.03)**	.04 (.04)	.03 (.01)*	−.11 (.04)*
Income	.06 (.01)**	.00 (.01)	.00 (.01)	.01 (.01)	.03 (.01)*	.00 (.01)	−.03 (.03)
Mediators							
Perceived financial resources during COVID						−.08 (.05)	.54 (.15)**
Change in perceived control						−.28 (.09)**	.76 (.28)**
Change in interpersonal resources						−.36 (.07)**	.47 (.15)**
COVID-related knowledge						−.01 (.03)	.28 (.09)**
COVID-related news consumption						−.01 (.03)	−.19 (.08)*
Residual variances	.46 (.06)**	.14 (.02)**	.26 (.04)**	.75 (.05)**	.76 (.05)**	.18 (.03)**	2.28 (.25)**
R^2	.29	.03	.04	.16	.12	.28	.21

Note. $N = 1{,}143$. SES = socioeconomic status. Racioethnicity is coded as four dummy variables with non-Hispanic White as the referent category. Age, general health status, education, and income were mean centered. SEs are reported inside the parentheses. When only education was included as a predictor, it had significant positive effects on perceived financial resources during COVID, COVID-related knowledge, COVID-related news consumption, and change in depressive symptoms, and had a significant negative effect on change in life satisfaction. When only income was included as a predictor, it had significant positive effects on perceived financial resources during COVID and COVID-related news consumption, and significant negative effect on change in life satisfaction but was not significantly related to change in depressive symptoms. All the effects of the mediators on the outcomes remained the same in these alternative models.
* $p < .05$. ** $p < .01$, two-tailed tests.

anism to explain why individuals with more education displayed an overall well-being decline. Further insight is thus needed. In supplemental analyses, education was not associated with job loss due to COVID-19, $r = -.06$, $p > .05$. We also added having experienced job loss (furloughed or laid off) due to COVID-19 as another control variable. Results were consistent with or without this control. An unmeasured explanation is the increase in work responsibility that individuals of higher education may have encountered. The pandemic meant that many managers had to lead their business units and teams through staffing changes such as layoffs or pay cuts, producing substantial stress (Knight, 2020). Further, educational attainment is a key predictor of participation in the stock market (Cooper & Zhu, 2016), which represents a nuanced aspect of financial resources that our measure might not have fully captured. In the few weeks preceding our T2 assessment, the Dow Jones Industrial Average lost one third of its total value (S&P Dow Jones Indices, 2020), which may have contributed to a greater loss of wealth (and fear of loss) among individuals with higher levels of education.

Finally, it is plausible that individuals of higher SES experience adaptation or an endowment effect whereby they have a higher expectation for a constant availability of resources (including ones not incorporated in our theorizing), and therefore experience greater declines in well-being when a crisis contracts or threatens their resource supplies (Diener & Biswas-Diener, 2002; Tversky & Kahneman, 1991). This possible explanation is particularly intriguing given that evidence suggests that the pandemic has hit individuals of lower SES very hard. As one of many examples of higher impacts to lower SES individuals, household crowding and higher odds of working on-site have been linked to higher rates of COVID-19 infections (Emeruwa et al., 2020; Oppel, Gebeloff, Lai, Wright, & Smith, 2020).

Our study assessed well-being early in the pandemic and it is possible that the findings of more severe well-being decline among individuals of higher SES are temporary. Future research should examine well-being among groups of higher and lower SES over a longer time during the pandemic as well as moderators of the impact of education (e.g., personality traits). For organizational and managerial practice, as well as mental health practitioners, it will be key to identify the groups for whom the impacts are longer lasting in order to address inequities. It would also be intriguing to examine if our findings replicate in other countries, to consider the role of threat of loss versus actual loss of resources, and to theorize the role of factors such as age and general health as more central predictors of psychological well-being during COVID.

There are several unique aspects to our investigation. Available pre–post studies of SES in the context of other crises have relied on data following versus during the event (Norris et al., 2002). Our study also expands collective knowledge by examining the role of resources in explaining SES differences in levels and changes in

Table 7
Indirect Effects, Direct Effects, and Total Effects Between SES and Change in Well-Being

		Indirect effect via . . .						
Predictor	Outcome	Perceived financial resources during COVID	Change in perceived control	Change in interpersonal resources	COVID-related knowledge	COVID-related news consumption	Direct effect	Total effect
Education	Change in depressive symptoms	−.002 [−.009, .002]	.004 [−.003, .015]	.001 [−.014, .012]	−.001 [−.005, .004]	−.001 [−.005, .003]	**.031 [.004, .057]**	**.032 [.014, .049]**
Income	Change in depressive symptoms	−.005 [−.011, .001]	.000 [−.005, .004]	.001 [−.005, .009]	.000 [−.001, .001]	.000 [−.004, .002]	.002 [−.017, .020]	−.003 [−.013, .008]
Education	Change in life satisfaction	.015 [−.009, .048]	−.012 [−.037, .012]	−.001 [−.016, .019]	**.019 [.003, .040]**	−.007 [−.023, .007]	**−.108 [−.191 −.025]**	**−.094 [−.137, −.042]**
Income	Change in life satisfaction	**.030 [.014, .050]**	.001 [−.014, .010]	−.002 [−.012, .008]	.002 [−.006, .010]	**−.006 [−.015, −.0004]**	−.029 [−.077, .020]	−.003 [−.030, .021]

Note. 95% CIs are reported inside the brackets. 95% CIs that excluded zero are bolded. 20,000 replications were used in the Monte Carlo procedure. SES = socioeconomic status.

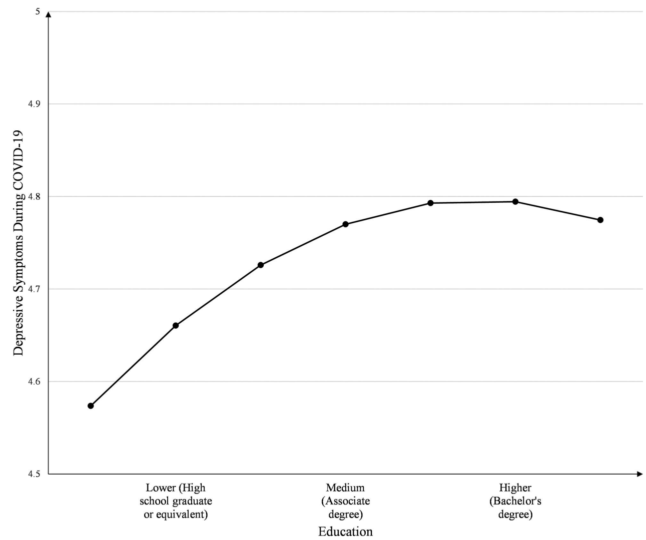

Figure 1. Curvilinear relationship between education and depressive symptoms during COVID-19. “Lower” = One *SD* below the *M* = 2.76, which, when rounded up, corresponds with high school graduate or equivalent. “Medium” = *M* = 4.57, which, when rounded up, corresponds with Associate degree. “Higher” = One *SD* above the *M* = 6.38, which, when rounded down, corresponds with bachelor’s degree.

well-being during a crisis event. An additional major strength of our study is that it features a probability sample-based, nationally representative panel. This broad sampling strategy was essential to represent both low and high levels of SES, and to provide a more rigorous test of our hypotheses.

We contribute to the conversation on socioeconomic inequality by illuminating how a crisis event afflicts well-being across the SES spectrum. The theory of fundamental social causes has primarily been examined with respect to physical health. Our study extends this theory to the examination of psychological well-being. We found more support for this theory with respect to income as an SES indicator than for education. Moreover, our study contrib-

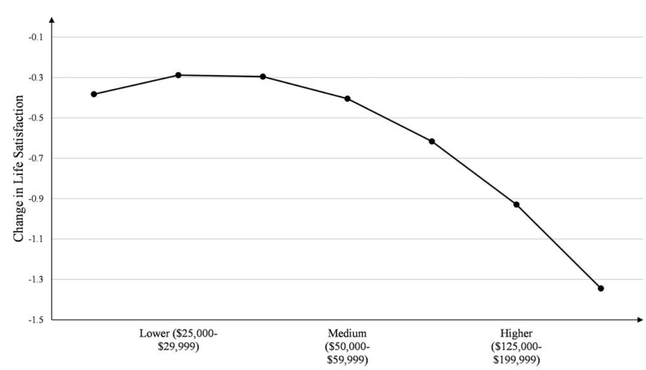

Figure 2. Curvilinear relationship between income and change in life satisfaction from before to during COVID-19. “Lower” = One *SD* below the *M* = 7.81, which, when rounded up, corresponds with $25,000–29,999. “Medium” = *M* = 11.77, which, when rounded up, corresponds with $50,000-$59,999. “Higher” = One *SD* above the *M* = 15.73, which, when rounded up, corresponds with $125,000-$199,999.

utes to the dynamic testing of COR theory, which emphasizes the velocity of loss spirals underlying chronic resource shortages and suggests the primacy of acute resource losses (Ennis, Hobfoll, & Schröder, 2000; Hobfoll, 2010). Our findings provide some support for both of these tenets. We found inferior well-being during the pandemic among individuals with lower income and also observed well-being declines to a greater extent among individuals of higher education. Future research is needed to distinguish between the relative impact of chronic resource shortages and acute resource losses. We also invite more managerial research delineating how SES contexts shape psychological experiences in the face of societal and organizational crises (Bapuji, Patel, Ertug, & Allen, 2020; Fiske & Markus, 2012).

As a limitation, our sample focused on individuals who participated in the Adult Social Networks and Well Being study that targeted U.S. adults between 30 and 80 years old. Future research can examine whether our results generalize to those under the age of 30. It is also important to qualify our inferences about COVID-19 per se being the definitive cause of well-being changes from 2019 to 2020. These dynamics may plausibly be explained by other factors that are not associated with the pandemic, such as the political environment. The consistent timing of well-being assessments in 2019 and 2020 mostly rule out alternative explanations related to seasonal effects.

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Appendix

Study Measures

Educational Attainment

What is the highest level of school you have completed or the highest degree you have received?

1. Less than high school
2. Some high school, no diploma
3. High school graduate or equivalent
4. Some college, no degree
5. Associate's degree
6. Bachelor's degree
7. Master's degree
8. Professional school degree
9. Doctorate degree

Annual Household Income

Which category represents the total combined income of all members of your family (living here) during the past 12 months? This includes money from jobs, net income from business, farm or rent, pensions, dividends, interest, social security payments and any other money income received by members of your family who are 15 years of age or older.

1. Less than $5,000
2. $5,000 to $7,499
3. $7,500 to $9,999
4. $10,000 to $12,499
5. $12,500 to $14,999
6. $15,000 to $19,999
7. $20,000 to $24,999
8. $25,000 to $29,999
9. $30,000 to $34,999
10. $35,000 to $39,999
11. $40,000 to $49,999
12. $50,000 to $59,999
13. $60,000 to $74,999
14. $75,000 to $99,999
15. $100,000 to $124,999
16. $125,000 to $199,999
17. $200,000 or more

Perceived Financial Resources (Meuris & Leana, 2018)

Since the start of the COVID-19 pandemic in the United Sates, how often have you . . .

1 = *Never*
2 = *Rarely*
3 = *Sometimes*
4 = *Often*
5 = *Always*

1. Been worried about your financial situation? (R)
2. Felt satisfied with your financial situation?
3. Felt overwhelmed by your financial obligations? (R)
4. Felt that you did not have enough money? (R)

Perceived Control (Lachman & Weaver, 1998)

Now we're going to ask you some questions about feelings you might have. Some of these questions have to do with how much control you feel you have over your life. Some of these questions might make you feel uncomfortable. Remember that you do not have to answer any question that you do not want to answer.

1 = *Strongly disagree*
2 = *Disagree*
3 = *Agree*
4 = *Strongly agree*
5 = *Do not know*

1. I can do just about anything I really set my mind to.
2. There is really no way I can solve some of the problems I have.
3. Sometimes I feel that I'm being pushed around in life. (R)
4. I have little control over the things that happen to me. (R)
5. What happens to me in the future mostly depends on me. (R)
6. I often feel helpless in dealing with the problems of life. (R)
7. There is little I can do to change many of the important things in my life. (R)

Interpersonal Resources (Hughes et al., 2004)

Since the start of the COVID-19 pandemic in the United Sates, to what extent have things gotten worse or better for you?

1 = *Hardly ever*
2 = *Some of the time*
3 = *Often*

1. How often do you feel that you lack companionship? (R)
2. How often do you feel left out? (R)
3. How often do you feel isolated from others? (R)

COVID-Related Knowledge

How knowledgeable would you rate yourself with regards to COVID-19 (e.g., symptoms, how to prevent getting the virus, and prevalence in your state)?

1 = *Not at all knowledgeable*
2 = *Slightly knowledgeable*
3 = *Somewhat knowledgeable*
4 = *Moderately knowledgeable*
5 = *Extremely knowledgeable*

(*Appendix continues*)

COVID-Related News Consumption

Since the start of the COVID-19 pandemic in the United Sates, how frequently have you followed the news related to the pandemic?

1 = *Never*
2 = *Rarely*
3 = *Occasionally*
4 = *A moderate amount*
5 = *A great deal*

Depressive Symptoms (Kroenke et al., 2009)

Over the LAST 2 WEEKS, how often have you been bothered by any of the following problems?

0 = *Not at all*
1 = *Several days*
2 = *More than half the days*
3 = *Nearly every day*

1. Little interest or pleasure in doing things.
2. Feeling down, depressed, or hopeless.
3. Trouble falling or staying asleep, or sleeping too much.
4. Feeling tired or having little energy.
5. Poor appetite or overeating.
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down.
7. Trouble concentrating on things, such as reading the newspaper or watching TV.
8. Moving or speaking so slowly that other people could have noticed? Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual.

Life Satisfaction (Kobau et al., 2010)

Using a scale of 1 to 10 where 1 means *very dissatisfied* and 10 means *very satisfied*, how do you feel about your life as a whole right now?

General Health Status

In general, would you say your health is *excellent*, *very good, good*, *fair*, or *poor*?

Note. (R) indicates reverse scored.

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