Psychological and Spiritual Outcomes During the COVID-19 Pandemic:

A Prospective Longitudinal Study of Adults With Chronic Disease

SUPPLEMENTAL MATERIAL

Table S1

Demographics of the T1–T3 Sample and the U.S. Population of Adults With Chronic Disease

Characteristic	T1–T3 *n* (%)	U.S.[a] %
Gender		
Male	100 (54.3)	48.8
Female	84 (45.7)	51.2
Age		
18-44 years	15 (8.2)	19.8
45-64 years	58 (31.5)	36.2
65-74 years	87 (47.3)	20.2
75 years or older	24 (13.0)	23.8
Race/ethnicity		
White	138 (75.0)	64.6
Black or African-American	16 (8.7)	13.6
Asian or Pacific Islander	11 (6.0)	3.8
Latina/o or Hispanic	16 (8.7)	12.8
American Indian/Alaska Native	1 (0.5)	1.5
Multiracial	2 (1.1)	3.6
Geographic location		
Midwest	35 (19.0)	22.1
Northeast	40 (21.7)	17.4
South	57 (31.0)	38.3
West	52 (28.3)	22.3
Education level		
High school graduate or lower	13 (7.1)	51.1
Some college but no degree	55 (29.9)	30.2
Bachelor's degree or higher	116 (63.0)	18.8
Household income last year		
Less than $50,000	51 (27.7)	60.2
$50,000 to $99,999	64 (34.8)	24.7
$100,000 or more	64 (34.8)	15.1
Prefer not to answer	5 (2.7)	--
Religious affiliation		
Christian	120 (65.2)	70.6
Jewish	15 (8.2)	1.9
Muslim	2 (1.1)	0.9
Buddhist	0 (0.0)	0.7
Hindu	2 (1.1)	0.7
Atheist or agnostic	19 (10.3)	7.1
Nothing in particular	19 (10.3)	15.8
Other	7 (3.8)	2.3

Note. T1–T3 sample $N = 184$.

[a]All U.S. population data is from the 2018 National Health Interview Survey data of "persons limited due to one or more chronic conditions" (National Center for Health Statistics, 2019, Table P-2b, p. 3, https://ftp.cdc.gov/pub/Health_Statistics/NCHS/NHIS/SHS/2018_SHS_Table_P-2.pdf). The only exception is the data on religious affiliation, which is from the Pew Research Center's (2015) U.S. Religious Landscape Survey (https://www.pewforum.org/religious-landscape-study/) and thus refers to the general U.S. adult population.

Table S2

Means, Standard Deviations, and Four-Way Analyses of Variance for Study Outcomes, By Time and Region

	Midwest		Northeast		South		West			
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F*(3,298)	η^2
Time 1 (*N* = 302)	*n* = 59		*n* = 60		*n* = 105		*n* = 78			
Depression symptoms	3.95	4.39	3.87	4.50	4.57	5.58	3.94	5.34	0.38	.004
Anxiety symptoms	3.12	3.86	3.23	4.39	4.34	5.78	3.40	5.02	1.10	.011
Personal suffering	2.32	2.42	2.47	2.72	2.79	2.98	2.37	2.65	0.51	.005
Psychological well-being	5.77	0.96	5.59	0.98	5.70	0.93	5.61	1.20	0.45	.005
Trait resilience	3.51	0.89	3.49	0.87	3.52	0.95	3.63	0.88	0.37	.004
Trait optimism	3.75	0.98	3.66	0.86	3.67	1.01	3.74	1.04	0.19	.002
Trait hope	6.20	1.19	6.21	1.10	6.13	1.19	6.13	1.17	0.11	.001
Trait grit	3.75	0.68	3.83	0.67	3.78	0.71	3.79	0.68	0.13	.001
Spiritual struggles	1.10	0.18	1.22	0.43	1.26	0.46	1.20	0.49	1.86	.018
Positive religious coping	2.16	1.09	1.80	0.85	2.33	1.12	1.79	1.04	5.48***	.052
Spiritual fortitude	3.70	0.79	3.39	0.79	3.71	0.75	3.38	0.83	4.11**	.005
Religious importance	2.76	1.21	2.55	1.02	2.81	1.14	2.23	1.15	4.41**	.043
Time 3 (*N* = 184)	*n* = 35		*n* = 40		*n* = 57		*n* = 52			
Depression symptoms	3.46	4.40	3.53	4.28	4.67	4.72	3.62	4.44	0.83	.013
Anxiety symptoms	2.40	3.34	3.50	4.57	3.84	4.39	3.06	4.24	0.93	.015
Personal suffering	1.65	2.05	1.91	2.29	2.53	2.81	1.65	2.41	1.47	.024
Psychological well-being	5.64	1.10	5.47	1.03	5.88	0.75	5.72	1.10	1.42	.023
Trait resilience	3.68	0.95	3.65	0.72	3.70	0.86	3.75	0.91	0.13	.002
Trait optimism	3.81	1.09	3.49	1.00	3.70	0.96	3.84	0.98	1.05	.017
Trait hope	6.40	1.28	6.12	1.04	6.17	1.08	6.27	1.24	0.45	.008
Trait grit	3.92	0.62	3.76	0.61	3.78	0.64	3.76	0.71	0.54	.009
Spiritual struggles	1.04	0.10	1.16	0.32	1.29	0.58	1.11	0.40	3.10*	.049
Positive religious coping	1.84	0.93	1.59	0.72	2.26	1.09	1.56	0.90	6.26***	.094
Spiritual fortitude	3.65	0.79	3.32	0.67	3.78	0.82	3.35	0.85	3.96**	.062
Religious importance	2.70	1.13	2.38	1.10	2.93	1.13	2.10	1.21	5.24**	.080
COVID-19 exposure	0.77	1.03	0.90	1.13	0.65	1.08	0.52	0.98	1.08	.017
COVID-19 fears	3.50	0.88	3.65	0.92	3.71	0.85	3.50	0.89	0.72	.007

*$p < .05$. **$p < .01$. ***$p < .001$.

Table S3

Intercorrelations for T2 and T3 Psychological and Spiritual Outcomes, Controlling for Baseline (T1) Scores

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Depression symptoms	--	**.65**	**.46**	**-.27**	**-.29**	**-.27**	**-.30**	**-.41**	.03	-.17	-.09	-.04
2. Anxiety symptoms	**.56**	--	**.50**	**-.27**	**-.39**	**-.33**	**-.38**	**-.42**	-.02	-.07	-.25	-.03
3. Personal suffering	**.39**	**.45**	--	**-.30**	-.25	-.20	-.25	-.20	.17	.03	-.19	-.09
4. Psychological well-being	**-.32**	-.10	-.22	--	**.33**	**.36**	**.44**	**.27**	.16	.15	.23	.10
5. Trait resilience	**-.26**	**-.32**	**-.37**	**.28**	--	.25	**.34**	**.35**	.09	.17	.25	.03
6. Trait optimism	**-.23**	**-.23**	**-.23**	**.32**	**.29**	--	**.40**	.21	-.04	-.01	.17	-.01
7. Trait hope	**-.27**	-.11	-.16	**.28**	**.25**	.09	--	**.34**	-.04	.11	**.38**	.09
8. Trait grit	**-.27**	-.15	-.09	**.23**	**.23**	.01	**.26**	--	.06	.22	.15	-.02
9. Spiritual struggles	.22	.16	.05	.02	-.03	-.09	-.03	.03	--	.17	-.08	-.02
10. Positive religious coping	.01	.01	-.10	.00	-.02	-.06	-.10	.03	.21	--	**.35**	**.27**
11. Spiritual fortitude	-.17	-.22	-.14	**.25**	.19	.20	.22	10	.05	.22	--	**.37**
12. Religious importance	-.06	-.05	-.09	.00	.02	.00	-.08	.00	.00	**.29**	**.25**	--

Note. Intercorrelations for T2 (after controlling for baseline scores) are presented below the diagonal and for T3 (after controlling for baseline scores) are presented above the diagonal. All correlations that are significant at $p < .0001$ are indicated in boldface type.

Table S4

Intercorrelations for Psychological, Social, Physical, and Stress-Related Outcomes at T2 (Below) and T3 (Above Diagonal)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	*M*	*SD*
1. Depression symptoms[a]	--	**.65**	**.46**	**-.27**	-.15	.14	.22	.10	.12	**.51**	.22	.02	-.18	3.89	4.48
2. Anxiety symptoms[a]	**.56**	--	**.50**	**-.27**	-.05	.17	**.42**	.24	.21	**.64**	.25	.02	-.20	3.27	4.21
3. Personal suffering[a]	**.39**	**.45**	--	**-.30**	-.15	.13	**.31**	**.26**	.20	**.44**	.22	.18	**-.27**	1.98	2.47
4. Psychological well-being[a]	**-.32**	-.10	-.22	--	**.27**	-.06	-.12	.10	.01	**-.29**	.04	-.04	.21	5.70	0.99
5. Perceived social support	-.08	-.05	-.11	.20	--	-.14	-.17	-.04	-.14	**-.35**	-.02	-.02	.23	3.96	1.00
6. Interpersonal resource loss	.17	.17	.14	-.06	-.05	--	**.46**	**.40**	**.30**	.23	.10	.12	.14	1.07	1.09
7. Psychological resource loss	**.31**	**.46**	**.34**	-.15	-.21	**.43**	--	**.67**	**.56**	**.55**	.24	-.05	-.02	1.02	1.13
8. Physical-health resource loss	.14	.19	.07	-.03	-.13	**-.32**	**.56**	--	**.63**	**.35**	.20	.06	-.08	0.77	1.02
9. Economic resource loss	.19	.22	.17	-.11	-.18	.13	**.42**	**.54**	--	**.36**	.16	.13	.03	0.84	1.20
10. Perceived stress	**.45**	**.61**	**.48**	**-.32**	**-.32**	.20	**.54**	.22	**.37**	--	.25	.02	**-.26**	1.23	0.77
11. COVID-19 fears	.14	**.23**	.04	.05	-.06	**.27**	.21	.12	.11	.16	--	.19	-.08	3.60	0.88
12. COVID-19 exposure	-.07	.05	.04	.15	-.07	.08	.05	.02	.01	.10	.16	--	.01	0.69	1.05
13. Self-rated physical health	-.10	-.04	-.13	.10	.22	.10	-.12	-.11	-.11	**-.24**	-.04	-.02	--	3.55	0.81
14. Number of chronic diseases	.00	-.05	-.08	.05	.04	-.07	.04	.12	-.03	.00	.15	.03	**-.35**		
15. Age	.01	-.16	-.06	.13	.17	.02	-.15	-.08	-.11	**-.36**	.09	.01	.19		
16. Gender (1 = female)	-.03	.04	-.06	.11	-.05	.02	.02	-.01	-.02	.07	-.02	.01	-.04		
17. Race/ethnicity (1 = minority)	-.08	.02	.09	-.08	-.12	-.02	.17	.11	.12	.12	-.11	-.01	-.12		
18. Marital status (1 = married)	.04	-.01	-.02	.03	**.49**	.02	-.16	-.07	-.13	-.16	.04	-.02	.16		
19. Sexual orientation (1 = LGB)	.01	.04	.00	-.04	**-.26**	.03	.19	-.01	-.04	.09	.14	.01	-.03		
20. Education level	.06	.02	.10	-.11	.00	.07	-.04	-.12	-.04	-.06	.05	.15	.16		
21. Household income	.02	.08	.07	-.06	.21	.16	-.03	-.01	-.05	-.09	.17	.07	**.24**		
22. Psychological resilience (1 = yes)	**-.48**	**-.63**	**-.35**	.13	**.25**	-.22	**-.48**	**-.23**	**-.28**	**-.66**	-.20	-.05	.17		
M	4.14	4.54	2.01	5.69	3.91	1.04	1.03	0.79	0.94	1.31	3.70	0.27	3.54		
SD	4.63	4.86	2.33	0.95	1.09	1.10	0.97	1.00	1.16	0.80	0.76	0.65	0.82		
A	.86	.92	.95	.90	.95	.77	.76	.84	.88	.91	.74	--	--		
Range	0-27	0-21	0-10	1-7	1-5	0-4	0-4	0-4	0-4	0-4	1-5	0-5	1-5		

Note. LGB = lesbian, gay, or bisexual. All correlations that are significant at $p < .0001$ are indicated in boldface type.

[a]Because this outcome was measured prepandemic, for all correlations including it, we controlled for baseline (T1) scores.