

Varied and Unexpected Changes in the Well-being of Seniors in the United States amid the COVID-19 Pandemic

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COVID-19 and Psychological Well-Being

- Recent work highlights the pandemic's toll on mental health
 - Daly et al. 2020; McGinty et al. 2020; Ettman et al. 2020; Holingue et al. 2020; Patrick et al. 2020; Xie et al. 2020; Riehm et al. 2020; Fitzpatrick et al. 2020
- Far less is understood about the effect on other measures of well-being
- This paper:
 - depressive symptoms but also negative affect, positive affect, life satisfaction, self-rated health and pain
 - Changes just before and after community spread of COVID-19 in the US.
 - Which demographic groups were most affected?
 - How are changes in well-being related to COVID-related variables such as local death rates, lost job/income, perceptions of getting COVID-19 and dying from the disease?

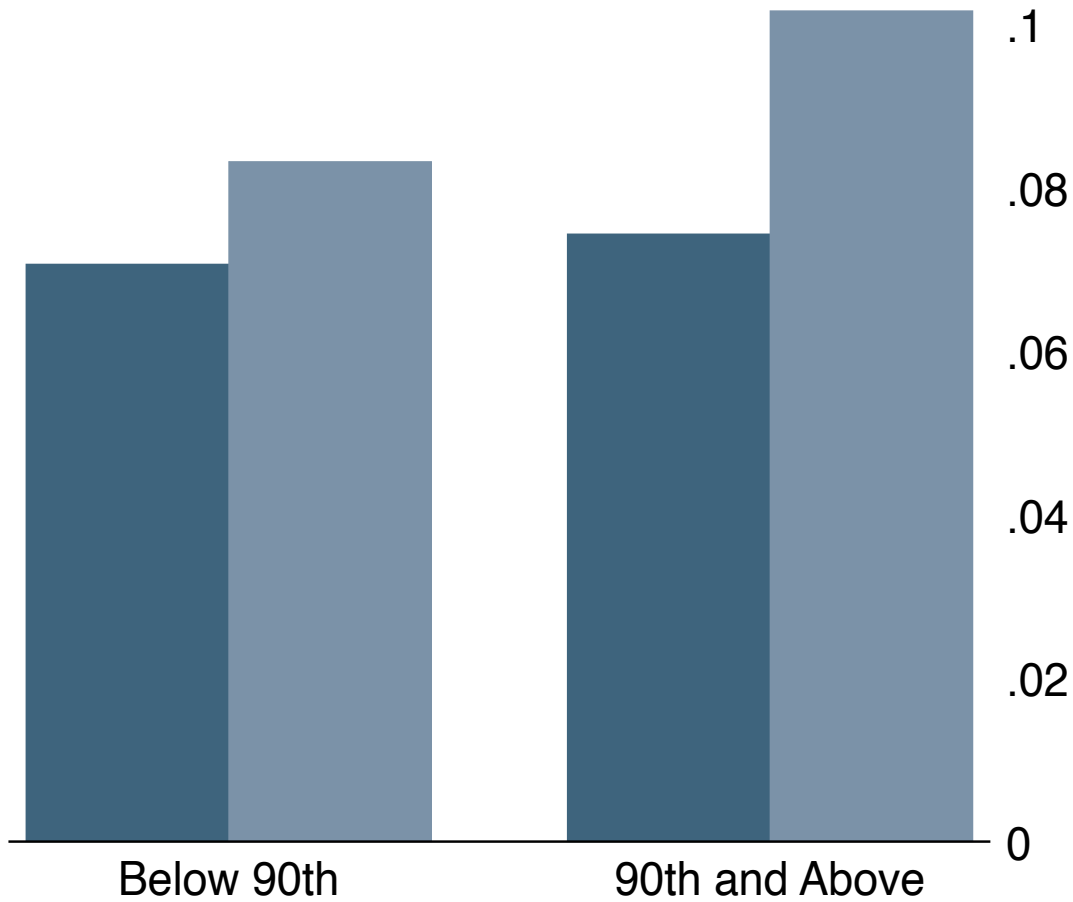
Data Collection

- Large national opt-in online panel (Dynata)
- Wave 1:
 - November 2019 and February 2020
 - 26,146 respondents ages 60-69
- Wave 2:
 - April and May 2020
 - 79% response rate, 68% all outcomes of interest
- Wave 3: (not used here)
 - July and August 2020
 - 60% response rate, 57% all outcomes of interest
- Those who did not respond W2 and/or W3 had lower income, education and worse mental health at W1
- Matched W2 and W3 to COVID death rates at the county of residence level and the interview date

Is There a Change in Well-Being
over Time? Over Space?

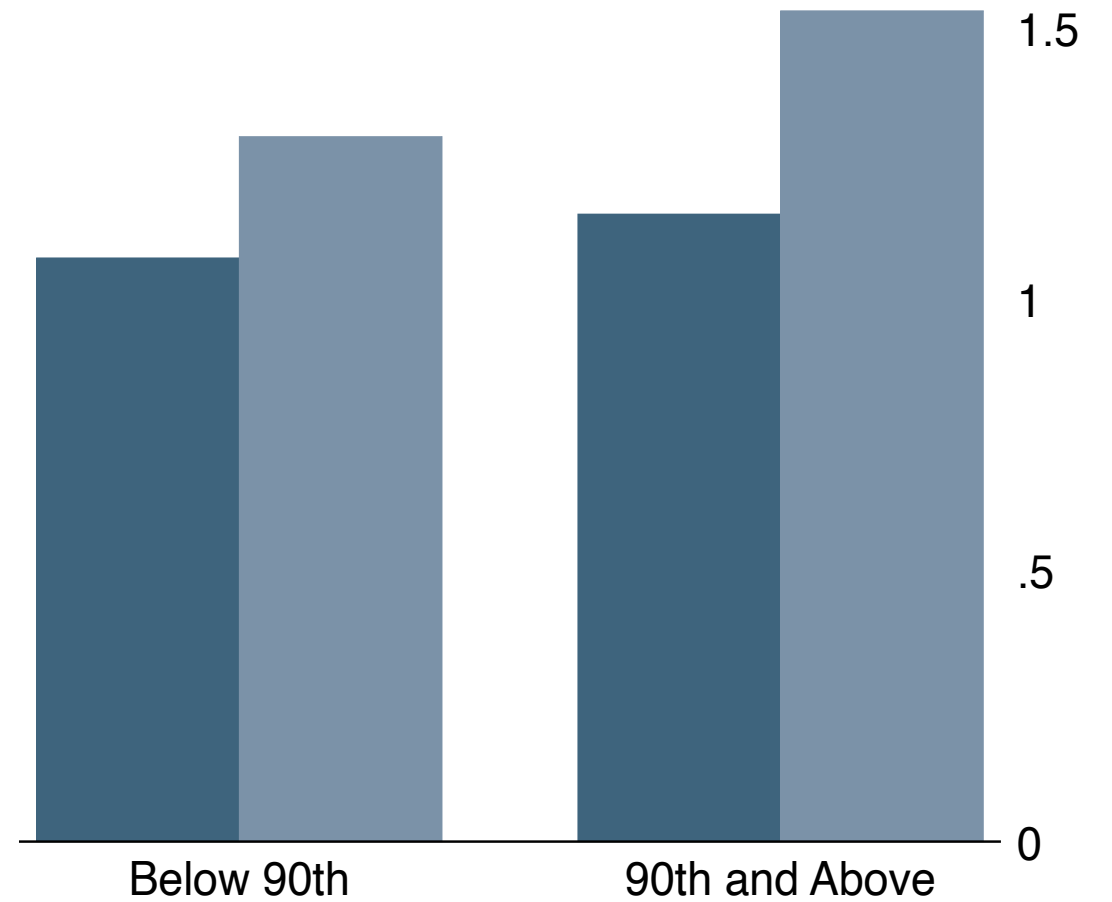
Depressive Symptoms by Death Rate

■ wave 1 ■ wave 2

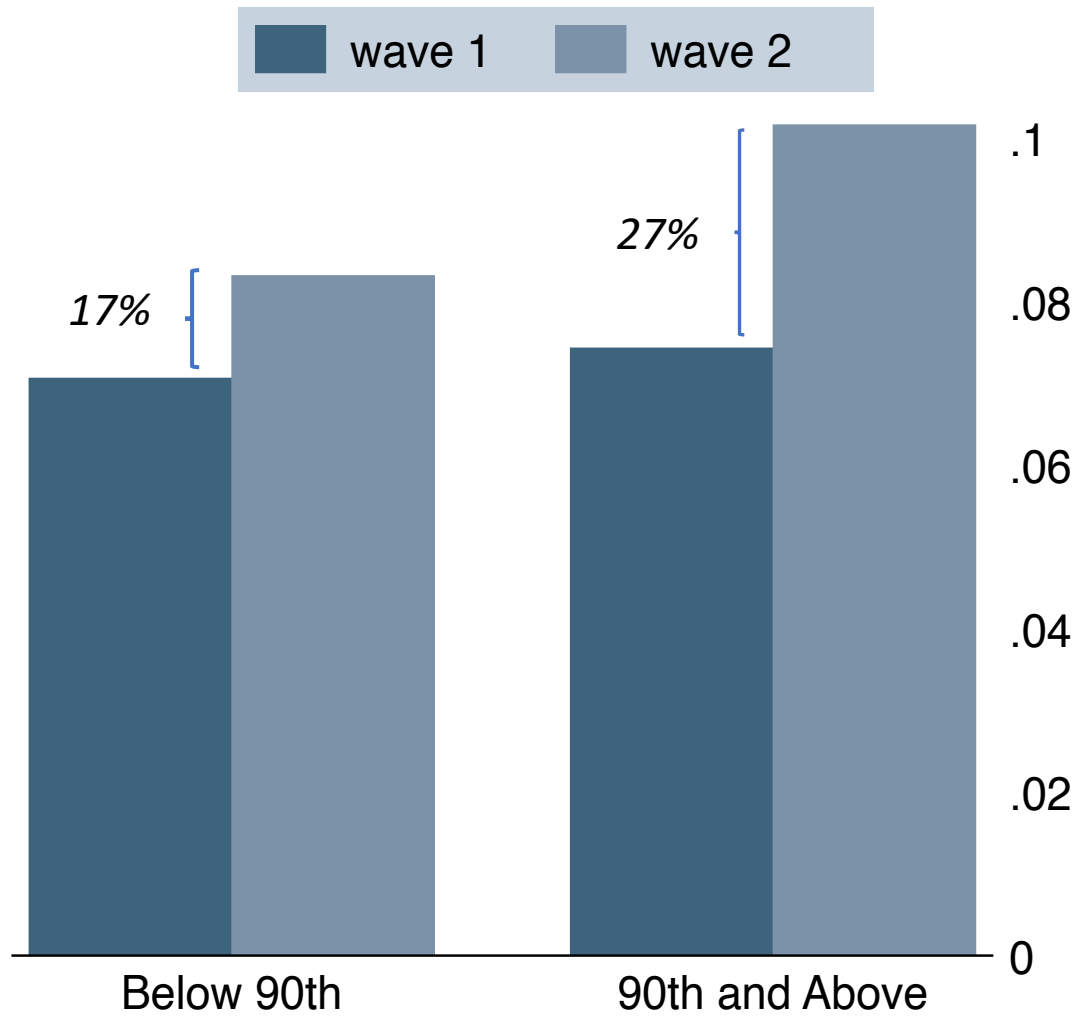


Negative Affect by Death Rate

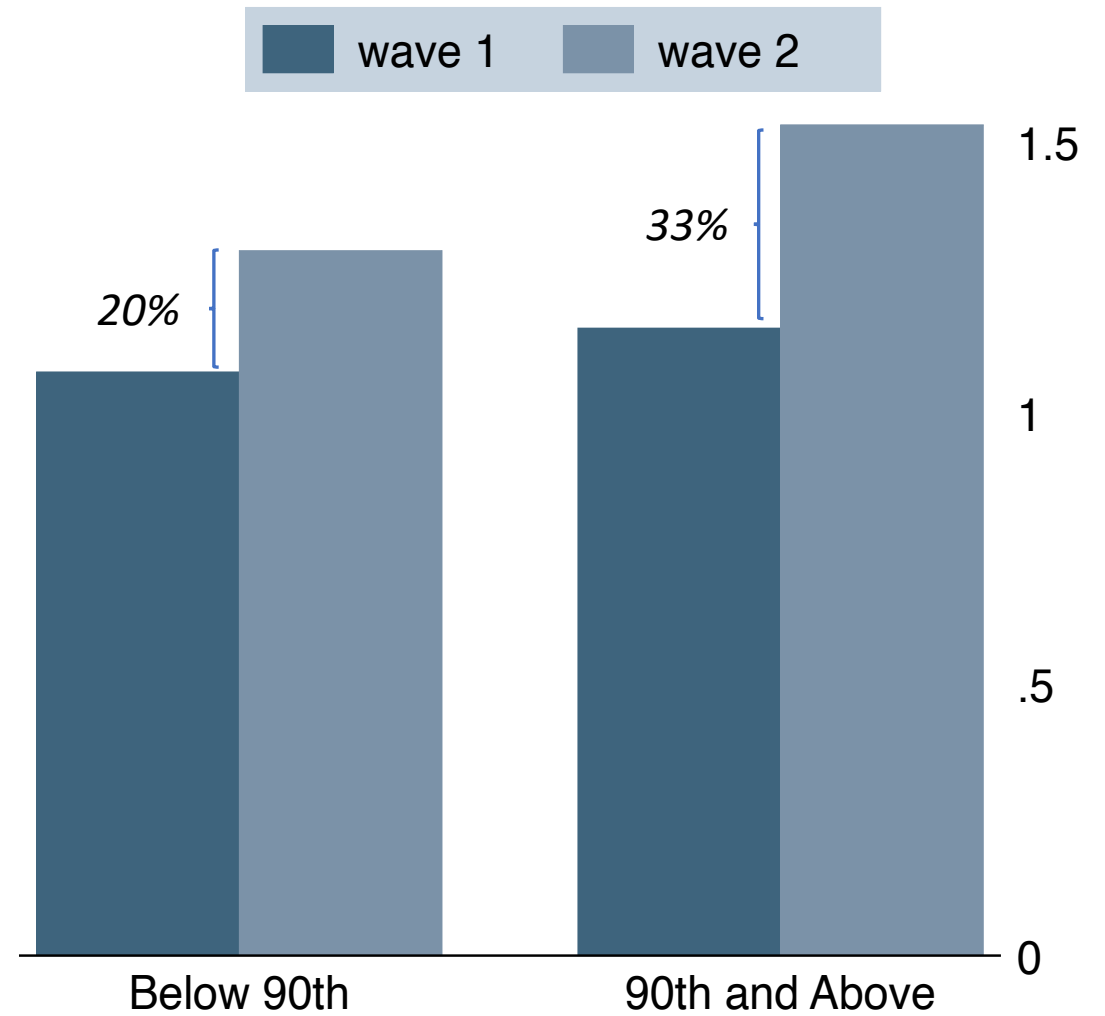
■ wave 1 ■ wave 2



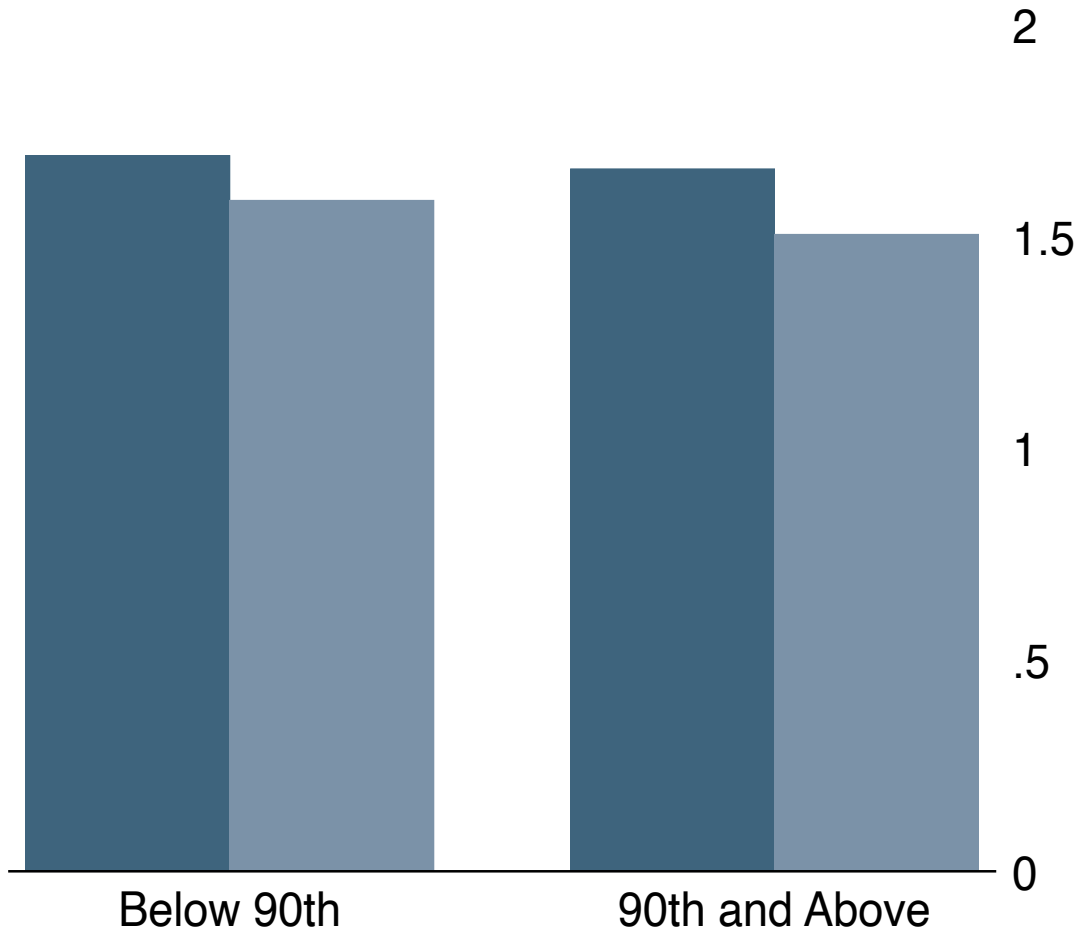
Depressive Symptoms by Death Rate



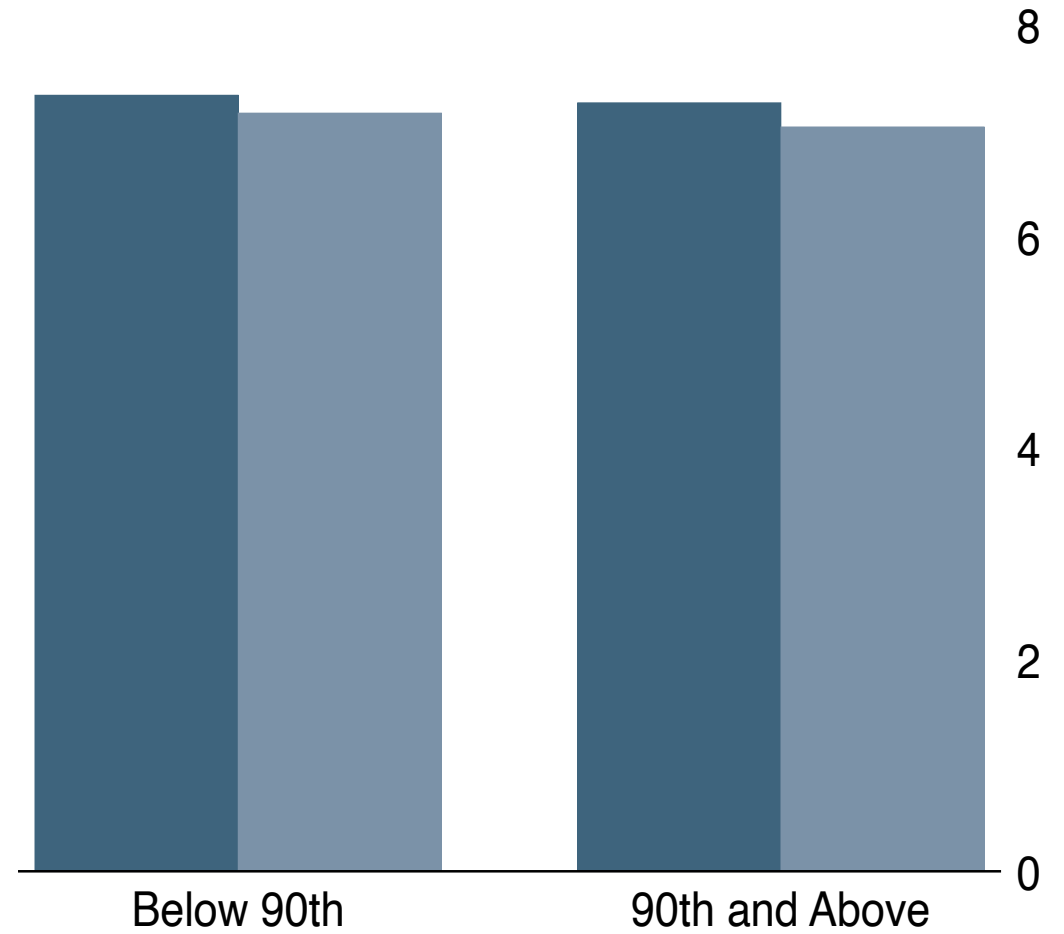
Negative Affect by Death Rate



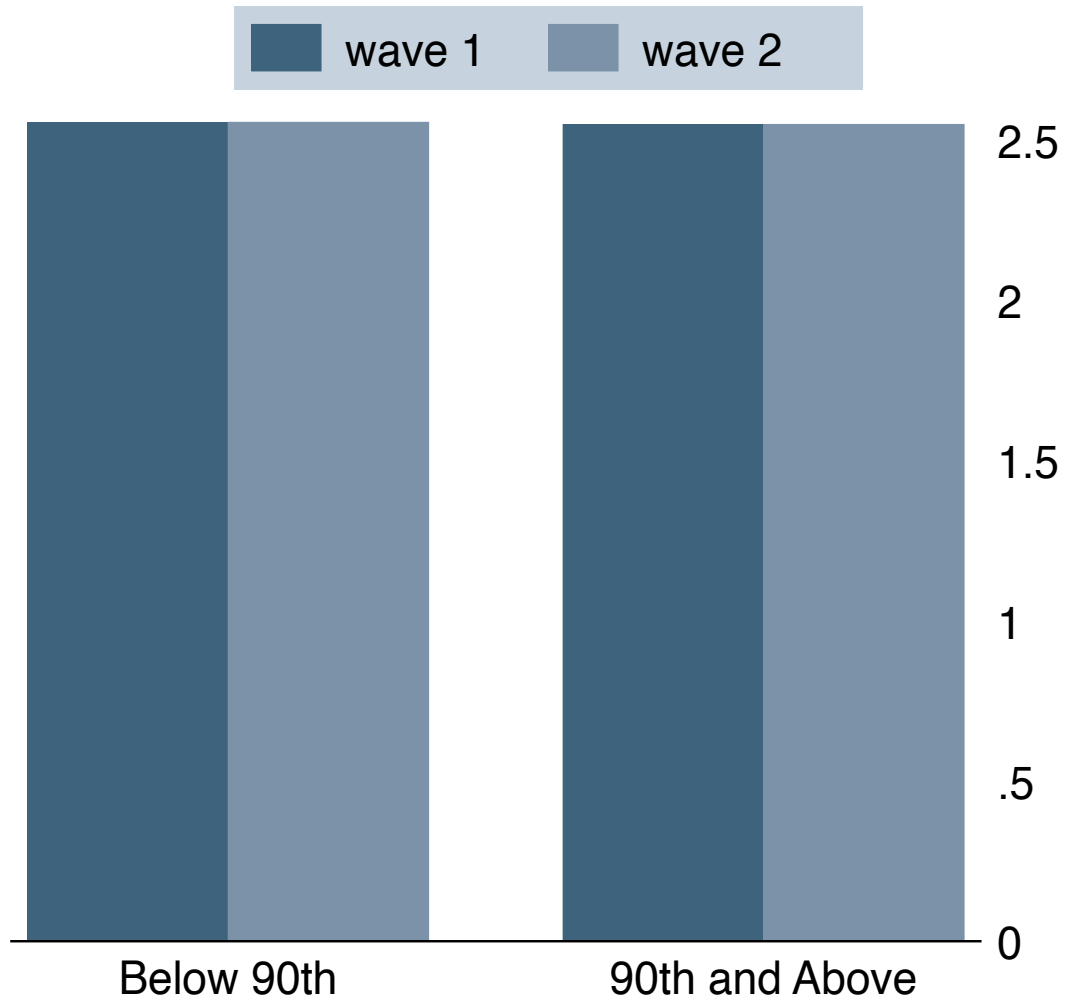
Positive Affect by Death Rate



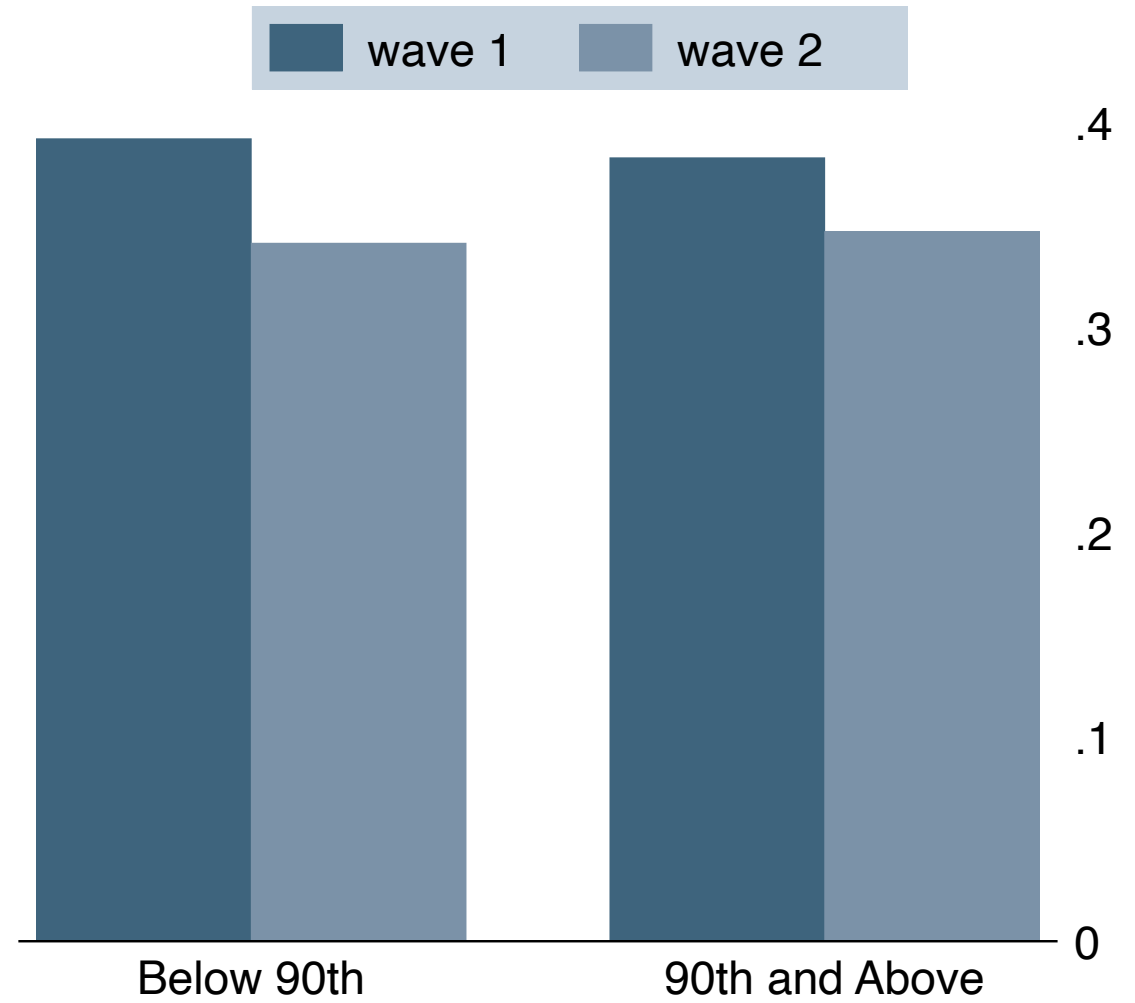
Cantril Ladder by Death Rate



Health Rating by Death Rate



Pain by Death Rate



How Does Changes in Well-Being
Vary with Gender and Education?

	Depressive Symptoms					Negative Affect Index				
				less than					less than	
	all	female	male	college	college +	all	female	male	college	college +
wave 2 indicator	0.014 (0.004)	0.024 (0.005)	-0.002 (0.005)	0.02 (0.007)	0.01 (0.004)	0.238 (0.016)	0.294 (0.021)	0.151 (0.024)	0.196 (0.028)	0.26 (0.020)
Constant	0.071 (0.002)	0.078 (0.002)	0.061 (0.002)	0.098 (0.003)	0.057 (0.002)	1.086 (0.008)	1.192 (0.010)	0.92 (0.012)	1.187 (0.014)	1.031 (0.010)
Observations	28,047	17,062	10,985	9,795	18,252	28,048	17,062	10,986	9,796	18,252
R-squared	0.711	0.709	0.716	0.729	0.692	0.745	0.737	0.75	0.754	0.74

	Depressive Symptoms					Negative Affect Index				
	all	female	male	less than college	college +	all	female	male	less than college	college +
wave 2 indicator	0.014 (0.004)	0.024 (0.005)	-0.002 (0.005)	0.02 (0.007)	0.01 (0.004)	0.238 (0.016)	0.294 (0.021)	0.151 (0.024)	0.196 (0.028)	0.26 (0.020)
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R-squared	0.711	0.709	0.716	0.729	0.692	0.745	0.737	0.75	0.754	0.74

	Positive Affect Index					Cantril Ladder				
				less than					less than	
	all	female	male	college	college +	all	female	male	college	college +
wave2	-0.11 (0.009)	-0.115 (0.012)	-0.103 (0.014)	-0.097 (0.016)	-0.118 (0.011)	-0.174 (0.018)	-0.202 (0.024)	-0.129 (0.028)	-0.129 (0.034)	-0.197 (0.022)
Constant	1.686 (0.004)	1.684 (0.006)	1.689 (0.007)	1.626 (0.008)	1.719 (0.005)	7.32 (0.009)	7.263 (0.012)	7.409 (0.014)	7.037 (0.017)	7.472 (0.011)
Observations	28,044	17,059	10,985	9,794	18,250	28,043	17,060	10,983	9,790	18,253
R-squared	0.721	0.712	0.736	0.733	0.713	0.83	0.826	0.837	0.83	0.827

	Poor Self-rated Health					Pain				
	all	female	male	less than college	college +	all	female	male	less than college	college +
wave2	0.002 (0.007)	-0.001 (0.009)	0.005 (0.010)	-0.001 (0.012)	0.003 (0.008)	-0.049 (0.006)	-0.05 (0.008)	-0.049 (0.010)	-0.055 (0.010)	-0.047 (0.007)
Constant	2.554 (0.003)	2.554 (0.004)	2.553 (0.005)	2.743 (0.006)	2.452 (0.004)	0.391 (0.003)	0.407 (0.004)	0.368 (0.005)	0.448 (0.005)	0.361 (0.004)
Observations	28,051	17,065	10,986	9,796	18,255	28,050	17,064	10,986	9,796	18,254
R-squared	0.91	0.906	0.917	0.905	0.91	0.74	0.745	0.731	0.743	0.736

Notes: All models control for individual fixed effects and cluster standard errors by individual.

Does COVID-Related Variables
Mediate Changes in Well-Being?

Panel A: Depressive Symptoms and Negative Affect

	Depressive Symptoms				Negative Affect Index			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
wave 2 indicator	0.012 (0.004)	0.009 (0.004)	-0.009 (0.006)	-0.016 (0.006)	0.223 (0.016)	0.207 (0.016)	0.04 (0.026)	0.009 (0.026)
above 90th COVID death rate	0.016 (0.012)	0.016 (0.012)	0.015 (0.012)	0.014 (0.012)	0.146 (0.055)	0.143 (0.055)	0.128 (0.054)	0.124 (0.054)
lost job/income		0.021 (0.011)	0.019 (0.011)	0.019 (0.011)		0.115 (0.048)	0.1 (0.048)	0.096 (0.048)
chance get COVID			0.025 (0.019)	0.022 (0.019)			0.417 (0.086)	0.406 (0.087)
chance die COVID			0.041 (0.016)	0.039 (0.016)			0.229 (0.072)	0.222 (0.072)
COVID kept from exercising				0.027 (0.008)				0.113 (0.037)
Constant	0.071 (0.002)	0.071 (0.002)	0.071 (0.002)	0.071 (0.002)	1.086 (0.008)	1.082 (0.008)	1.082 (0.008)	1.082 (0.008)
Observations	28,047	27,045	27,008	27,007	28,048	27,046	27,009	27,008
R-squared	0.711	0.707	0.708	0.708	0.746	0.741	0.744	0.744

Panel A: Depressive Symptoms and Negative Affect

	Depressive Symptoms				Negative Affect Index			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
wave 2 indicator	0.012 (0.004)	0.009 (0.004)	-0.009 (0.006)	-0.016 (0.006)	0.223 (0.016)	0.207 (0.016)	0.04 (0.026)	0.009 (0.026)
above 90th COVID death rate	0.016 (0.012)	0.016 (0.012)	0.015 (0.012)	0.014 (0.012)	0.146 (0.055)	0.143 (0.055)	0.128 (0.054)	0.124 (0.054)
lost job/income		0.021 (0.011)	0.019 (0.011)	0.019 (0.011)		0.115 (0.048)	0.1 (0.048)	0.096 (0.048)
chance get COVID			0.025 (0.019)	0.022 (0.019)			0.417 (0.086)	0.406 (0.087)
chance die COVID			0.041 (0.016)	0.039 (0.016)			0.229 (0.072)	0.222 (0.072)
COVID kept from exercising				0.027 (0.008)				0.113 (0.037)
Constant	0.071 (0.002)	0.071 (0.002)	0.071 (0.002)	0.071 (0.002)	1.086 (0.008)	1.082 (0.008)	1.082 (0.008)	1.082 (0.008)
Observations	28,047	27,045	27,008	27,007	28,048	27,046	27,009	27,008
R-squared	0.711	0.707	0.708	0.708	0.746	0.741	0.744	0.744

Panel A: Depressive Symptoms and Negative Affect

	Depressive Symptoms				Negative Affect Index			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
wave 2 indicator	0.012 (0.004)	0.009 (0.004)	-0.009 (0.006)	-0.016 (0.006)	0.223 (0.016)	0.207 (0.016)	0.04 (0.026)	0.009 (0.026)
above 90th COVID death rate	0.016 (0.012)	0.016 (0.012)	0.015 (0.012)	0.014 (0.012)	0.146 (0.055)	0.143 (0.055)	0.128 (0.054)	0.124 (0.054)
lost job/income		0.021 (0.011)	0.019 (0.011)	0.019 (0.011)		0.115 (0.048)	0.1 (0.048)	0.096 (0.048)
chance get COVID			0.025 (0.019)	0.022 (0.019)			0.417 (0.086)	0.406 (0.087)
chance die COVID			0.041 (0.016)	0.039 (0.016)			0.229 (0.072)	0.222 (0.072)
COVID kept from exercising				0.027 (0.008)				0.113 (0.037)
Constant	0.071 (0.002)	0.071 (0.002)	0.071 (0.002)	0.071 (0.002)	1.086 (0.008)	1.082 (0.008)	1.082 (0.008)	1.082 (0.008)
Observations	28,047	27,045	27,008	27,007	28,048	27,046	27,009	27,008
R-squared	0.711	0.707	0.708	0.708	0.746	0.741	0.744	0.744

Panel B: Positive Affect and Life Evaluation

	Positive Affect				Cantril Ladder			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
wave2	-0.106 (0.010)	-0.1 (0.011)	-0.057 (0.016)	-0.044 (0.017)	-0.167 (0.020)	-0.132 (0.022)	-0.02 (0.031)	0.006 (0.033)
w2_death_rt_90p	-0.04 (0.028)	-0.04 (0.028)	-0.036 (0.028)	-0.034 (0.028)	-0.062 (0.073)	-0.055 (0.071)	-0.044 (0.070)	-0.041 (0.070)
w2_lostjoborinc		-0.044 (0.027)	-0.04 (0.027)	-0.039 (0.027)		-0.246 (0.061)	-0.234 (0.061)	-0.232 (0.061)
covidchance_you_get_w2			-0.106 (0.047)	-0.102 (0.047)			-0.297 (0.096)	-0.286 (0.096)
covidchance_die_w2			-0.062 (0.038)	-0.059 (0.038)			-0.14 (0.068)	-0.136 (0.068)
covid7d_exercise_w2				-0.044 (0.020)				-0.095 (0.037)
Constant	1.686 (0.005)	1.687 (0.005)	1.687 (0.005)	1.687 (0.005)	7.32 (0.009)	7.323 (0.010)	7.321 (0.009)	7.321 (0.009)
Observations	28,044	27,041	27,004	27,003	28,043	27,041	27,004	27,003
R-squared	0.721	0.716	0.717	0.717	0.83	-0.05162 0.827	0.828	0.829

Notes: All models control for individual fixed effects and cluster standard errors by individual.

Panel C: Self-rated Health and Pain

	Poor Self-rated Health				Pain			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
wave2	0.002 (0.007)	0.002 (0.007)	-0.03 (0.011)	-0.041 (0.011)	-0.051 (0.007)	-0.046 (0.007)	-0.052 (0.010)	-0.049 (0.010)
w2_death_rt_90p	0 (0.023)	0.002 (0.023)	0 (0.024)	-0.001 (0.024)	0.013 (0.019)	0.014 (0.019)	0.013 (0.019)	0.014 (0.019)
w2_lostjoborinc		-0.01 (0.019)	-0.012 (0.019)	-0.013 (0.019)		-0.028 (0.018)	-0.029 (0.018)	-0.029 (0.018)
covidchance_you_get_w2			0.042 (0.033)	0.038 (0.033)			0.028 (0.029)	0.029 (0.029)
covidchance_die_w2			0.077 (0.024)	0.074 (0.024)			-0.005 (0.024)	-0.004 (0.024)
covid7d_exercise_w2				0.04 (0.014)				-0.01 (0.013)
Constant	2.554 (0.003)	2.553 (0.003)	2.553 (0.003)	2.553 (0.003)	0.391 (0.003)	0.391 (0.003)	0.391 (0.003)	0.391 (0.003)
Observations	28,051	27,048	27,011	27,010	28,050	27,047	27,010	27,009
R-squared	0.91	0.909	0.909	0.909	0.74	0.735	0.735	0.735

Notes: All models control for individual fixed effects and cluster standard errors by individual.

Conclusions

- Large increases in depressive symptoms and negative affect, decreases in positive affect
 - Changes largest among women and those with a college degree or higher
 - Negative affect 70% higher among high COVID-19 death rate counties and 50% higher among those losing job/income due to COVID-19
- In contrast, life satisfaction and self-rated health relatively unchanged, while pain decreased
 - Short- vs. longer-run measures of well-being
 - Pain was not mediated by loss of work, exercise or other survey measures
 - Pain levels are reversed in wave 3, except for those in counties hit hard in July/August, suggesting a role for limitations in movement
- Assumptions of purely negative well-being changes might be unfounded
- Conclusions might differ in the longer-run