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## **Economic precarity, social isolation, and suicidal ideation during the COVID-19 pandemic**

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## **Abstract**

### **Importance**

The US population faces stressors associated with suicide brought on by the COVID-19 pandemic.

Understanding the relationship between stressors and suicidal ideation may inform policies and programs to prevent suicide.

### **Objective**

To evaluate the relationship between stressors and suicidal ideation during the COVID-19 pandemic.

### **Design**

We compared suicidal ideation in 2017-2018 to suicidal ideation in 2020. We estimated the association between stressors and suicidal ideation in bivariable and multivariable Poisson regression models with robust variance.

### **Setting**

United States

### **Participants**

Participants were from two, nationally representative surveys of US adults: The 2017-2017 National Health and Nutrition Examination Survey and the 2020 COVID-19 and Life Stressors Impact on Mental Health and Well-being study (conducted March 31 to April 13), analyzed April 28 to September 30, 2020.

### **Exposures**

Economic precarity as measured through job loss or difficulty paying rent and social isolation based on reporting “feeling alone.”

## **Main outcome measure**

Suicidal ideation based on reporting “Thoughts that you would be better off dead or of hurting yourself in some way” over the past two weeks.

## **Results**

Suicidal ideation increased more than fourfold, from 3.4% in the 2017-2018 NHANES to 16.3% in the 2020 CLIMB survey, and from 5.8% to 26.4% among participants in low-income households. Suicidal ideation was more prevalent among people facing difficulty paying rent (31.5%), job loss (24.1%), and loneliness (25.1%), with each stressor associated with suicidal ideation in bivariable models. In the multivariable model, difficulty paying rent was associated with suicidal ideation (aPR: 1.5, 95% CI: 1.2 to 2.1), while losing a job was not (aPR: 0.9, 95% CI: 0.6 to 1.2). Feeling alone was associated with suicidal ideation (aPR: 1.9, 95% CI: 1.5 to 2.4).

## **Conclusions and relevance**

Suicidal ideation increased more than fourfold during the COVID-19 pandemic. Difficulty paying rent and loneliness were most associated with suicidal ideation. Policies and programs to support people experiencing economic precarity and loneliness may contribute to suicide prevention.

## **Economic precarity, social isolation, and suicidal ideation during the COVID-19 pandemic**

During the coronavirus 2019 (COVID-19) pandemic the population of the United States (US) is facing several co-occurring stressors. The response to the pandemic has led to economic downturn, creating stressors of job loss and financial distress. Physical distancing to prevent the spread of COVID-19 occasions stressors including social isolation. Economic precarity<sup>1</sup> and social isolation<sup>2</sup> are associated with mental distress and suicide outside of the pandemic context. The prolonged intersection of these forces during the COVID-19 pandemic could have profound implications for suicide, already a leading cause of premature death in the US.<sup>3</sup> Increases in suicide have occurred with prior pandemics,<sup>4</sup> and emerging evidence of increased depression during the COVID-19 pandemic further raises concern about the risk for suicide during COVID-19.<sup>5,6</sup> While suicide mortality data are typically not publicly available for several months after the end of each year, understanding the populations most at risk of suicidal ideation and the association between COVID-19 stressors and suicidal ideation can inform policies and programs to prevent suicide.

## **Methods**

### *Sample*

We used data from a nationally representative sample of US adults aged 18 or older collected through the AmeriSpeak standing panel. Panelists were invited to participate in the COVID-19 and Life Stressors Impact on Mental Health and Well-being (CLIMB) study from March 31, 2020 through April 13, 2020 and paid a cash equivalent of \$3 for completing the survey. Of those invited to participate in the survey who had responded to a survey in the past 6 months, 64% completed it. As a pre-pandemic comparison, we used data from the 2017-2018 National Health and Nutrition Examination Survey (NHANES), a nationally representative sample of noninstitutionalized civilian US adults aged 18 years or older collected by the US government. The CLIMB and NHANES samples are comparable in that they are both nationally representative. We excluded participants who did not respond to questions about suicidal ideation in NHANES and participants who did not respond to any variables included in analyses in CLIMB data.

## *Exposures*

We evaluated three COVID-19 stressors reflecting economic precarity and social isolation, each measured as binary variables reported in response to a question, “Have any of the following affected your life as a result of the coronavirus or COVID-19 outbreak?” First, we measured job loss based on checking “losing a job.” Second, we measured difficulty paying rent based on checking “having difficulty paying rent.” Third, we measured social isolation as checking “feeling alone.”

## *Outcome*

We measured suicidal ideation based on Patient Health Questionnaire-9 (PHQ-9) item 9, which asks participants to rate the frequency with which they have had “Thoughts that you would be better off dead or of hurting yourself in some way” over the past two weeks and response options of “Not at all, several days, more than half the days, or nearly every day.” We created a binary variable for reporting these feelings with any frequency over the past two weeks. Prior research indicates responses to this question were correlated with future suicide attempts and deaths.<sup>7-9</sup>

## *Analysis*

First, we described the demographic characteristics of participants in the 2020 CLIMB data and in the 2017-2018 NHANES data. Second, we estimated the prevalence of suicidal ideation by demographic characteristics and calculated the share with suicidal ideation within subgroups in 2020 relative to 2017-2018. Third, we estimated unadjusted and adjusted prevalence ratios (PR and aPR) of the association between COVID-19 related stressors and suicidal ideation using a Poisson regression model with robust variance to approximate a log-binomial regression model, with  $\alpha = 0.05$ .<sup>10</sup> In the multivariable model, we adjusted for age group, education level, sex, race and ethnicity, household income, savings, marital status, COVID-19 illness, and COVID-19 bereavement.

## **Results**

A total of 1,415 (96.3%) of 1,470 CLIMB participants responded to all questions relevant to the analysis and 5,085 (86.8%) of 5,856 NHANES participants responded to suicidal ideation questions and were included in

the samples. Demographic characteristics of both samples were nationally representative (**Table 1**). Overall, suicidal ideation increased more than fourfold, from 3.4% in the 2017-2018 NHANES to 16.3% in the 2020 CLIMB survey. The greatest absolute increases in suicidal ideation and 2020 prevalence of suicidal ideation were among participants earning less than \$20,000 (5.8% to 26.4%), participants aged 18 to 29 (4.1% to 23.5%), and participants who were Hispanic (3.7% to 23.1%). In 2020, suicidal ideation was high among those who faced difficulty paying rent (31.5%, **Figure 1**) and job loss (24.1%), as well as loneliness (25.1%).

Each of the stressors we evaluated were associated with suicidal ideation in the bivariable model (**Table 2**; Difficulty paying rent PR: 2.3, 95% CI: 1.8 to 3.1; feeling alone PR: 2.1, 95% CI: 1.6 to 2.6; job loss PR: 1.6, 95% CI: 1.1 to 2.2). In the multivariable model, difficulty paying rent was associated with suicidal ideation (aPR: 1.5, 95% CI: 1.2 to 2.1), while losing a job was not (aPR: 0.9, 95% CI: 0.6 to 1.2). Feeling alone was also associated with suicidal ideation (aPR: 1.9, 95% CI: 1.5 to 2.4). Although the sample size for persons with COVID-19 illness (n=12) or bereavement (n=25) is small, the results (66.7% and 36.0%, respectively) are suggestive that COVID-19 illness or bereavement may be associated with increased suicidal ideation.

## Discussion

We found that there was a more than fourfold increase in suicidal ideation during the COVID-19 pandemic; 16.1% of people reported suicidal ideation, relative to 2017-2018, when 3.4% of people reported suicidal ideation. In keeping with prior studies on psychological distress and depression, we found that people living in low-income households and young people are particularly at risk of suicidal ideation during the COVID-19 pandemic.<sup>5,6</sup>

Reporting difficulty paying rent was associated with suicidal ideation. Prior research indicates that financial distress, such as that which has become widespread during the COVID-19 pandemic, is associated with suicide<sup>1</sup> and that eviction in particular is associated with suicide.<sup>11</sup> Policies such as the Center for Disease Control and Prevention's federal eviction moratorium, state eviction moratoriums, and federal and state unemployment insurance policies<sup>12</sup> and the federal stimulus payments may play help prevent suicide. While job loss was not associated with suicidal ideation during the CLIMB study period of late March and early April,

it is important to study mental health among people who lost work due to the pandemic over the long term as high unemployment has been prolonged for several months, especially for people in low-income households and for people who are Black and Hispanic.<sup>13</sup>

People who reported feeling lonely were nearly twice as likely to report suicidal ideation, highlighting the need for programs and policies to provide social support, such as through social connections in environments with lower COVID-19 risk (e.g. outdoors) or via computer or phone.

This study was conducted in late March and early April 2020, when COVID-19 spread across the US was still in its early stages; as such we did not have a large enough sample of persons who had contracted COVID-19 or had loved ones who died to study the association between COVID-19 illness or bereavement with suicidal ideation. The results suggest a potential association between these exposures and suicidal ideation that warrants further study.

Finally, prior studies indicate that means restriction,<sup>14</sup> particularly of firearms,<sup>15</sup> is associated with reductions in suicide. Policies or programs to reduce household firearm ownership could play an important role in suicide prevention in the COVID-19 context of elevated stressors.

Limitations include that suicidal ideation was based on self-report and that the characteristics of participants in CLIMB and NHANES differed. Those who responded to surveys may have differed from those who did not, particularly if stressors affected survey participation. The CLIMB study was conducted early in the pandemic period, and the relationship between stressors and suicidal ideation may have changed as the pandemic and associated stressors continue to affect the US population.

## **Conclusion**

Suicidal ideation increased substantially during the COVID-19 pandemic. Those facing difficulty paying rent and loneliness may be at particular risk of suicide. Policies and programs to support people experiencing



economic precarity and difficulty paying rent may contribute to suicide prevention, as may programs to support individuals facing prolonged social isolation.

## References

- 1 Elbogen EB, Lanier M, Montgomery AE, Strickland S, Wagner HR, Tsai J. Financial strain and suicide attempts in a nationally representative sample of US adults. *American Journal of Epidemiology* 2020.
- 2 Calati R, Ferrari C, Brittner M, Oasi O, Olié E, Carvalho AF, *et al.* Suicidal thoughts and behaviors and social isolation: A narrative review of the literature. *Journal of Affective Disorders* 2019;**245**:653–67. <https://doi.org/10.1016/j.jad.2018.11.022>.
- 3 National Vital Statistic System & C for DC. 10 Leading causes of death by age group, United States–2018 2019.
- 4 Yip PSF, Cheung YT, Chau PH, Law YW. The impact of epidemic outbreak: The case of severe acute respiratory syndrome (SARS) and suicide among older adults in Hong Kong. *Crisis: The Journal of Crisis Intervention and Suicide Prevention* 2010;**31**:86–92. <https://doi.org/10.1027/0227-5910/a000015>.
- 5 Ettman CK, Abdalla SM, Cohen GH, Sampson L, Vivier PM, Galea S. Prevalence of Depression Symptoms in US Adults Before and During the COVID-19 Pandemic. *JAMA Network Open* 2020;**3**:e2019686–e2019686.
- 6 McGinty EE, Presskreischer R, Han H, Barry CL. Psychological Distress and Loneliness Reported by US Adults in 2018 and April 2020. *JAMA* 2020.
- 7 Simon GE, Rutter CM, Peterson D, Oliver M, Whiteside U, Operskalski B, *et al.* Does Response on the PHQ-9 Depression Questionnaire Predict Subsequent Suicide Attempt or Suicide Death? *PS* 2013;**64**:1195–202. <https://doi.org/10.1176/appi.ps.201200587>.
- 8 Simon GE, Coleman KJ, Rossom RC, Beck A, Oliver M, Johnson E, *et al.* Risk of suicide attempt and suicide death following completion of the Patient Health Questionnaire depression module in community practice. *J Clin Psychiatry* 2016;**77**:221–7. <https://doi.org/10.4088/JCP.15m09776>.
- 9 Louzon SA, Bossarte R, McCarthy JF, Katz IR. Does suicidal ideation as measured by the PHQ-9 predict suicide among VA patients? *Psychiatric Services* 2016;**67**:517–522.
- 10 Zou G. A modified poisson regression approach to prospective studies with binary data. *American Journal of Epidemiology* 2004;**159**:702–706.
- 11 Fowler KA, Gladden RM, Vagi KJ, Barnes J, Frazier L. Increase in suicides associated with home eviction and foreclosure during the US housing crisis: findings from 16 national violent death reporting system states, 2005–2010. *American Journal of Public Health* 2015;**105**:311–316.
- 12 Cylus J, Glymour MM, Avendano M. Do generous unemployment benefit programs reduce suicide rates? A state fixed-effect analysis covering 1968–2008. *American Journal of Epidemiology* 2014;**180**:45–52.
- 13 Bureau of Labor Statistics. *The Employment Situation - September 2020*. 2020. URL: <https://www.bls.gov/news.release/empsit.nr0.htm> (Accessed 4 October 2020).
- 14 Yip PS, Caine E, Yousuf S, Chang S-S, Wu KC-C, Chen Y-Y. Means restriction for suicide prevention. *The Lancet* 2012;**379**:2393–2399.
- 15 Miller M, Barber C, White RA, Azrael D. Firearms and suicide in the United States: is risk independent of underlying suicidal behavior? *American Journal of Epidemiology* 2013;**178**:946–955.

**Table 1: Participant demographic characteristics, COVID-19 stressors, and suicidal ideation**

	Sample characteristics				Suicidal ideation				Absolute difference 2020 - (2017- 2018)	Ratio, 2020: 2017- 2018
	NHANES, 2017-2018		CLIMB, 2020		NHANES, 2017- 2018, Suicidal ideation		CLIMB, 2020			
	n	%	n	%	n	%	n	%	Percentage points	
Total	5,085	100	1,415	100	192	3.4	231	16.3	12.9	4.8
<b>Difficulty paying rent</b>										
No	N/A	N/A	1,199	84.7	N/A	N/A	163	13.6	N/A	N/A
Yes	N/A	N/A	216	15.3	N/A	N/A	68	31.5	N/A	N/A
<b>Lost job</b>										
No	N/A	N/A	1,253	88.5	N/A	N/A	192	15.3	N/A	N/A
Yes	N/A	N/A	162	11.5	N/A	N/A	39	24.1	N/A	N/A
<b>Feeling alone</b>										
No	N/A	N/A	952	67.3	N/A	N/A	115	12.1	N/A	N/A
Yes	N/A	N/A	463	32.7	N/A	N/A	116	25.1	N/A	N/A
<b>Age group</b>										
18-29	965	21.3	238	16.8	38	4.1	56	23.5	19.1	5.7
30-44	1,106	24.2	493	34.8	38	3.1	92	18.7	15.4	6.0
45-59	1,183	26.5	337	23.8	48	3.0	47	14	11	4.7
60+	1,831	28.1	347	24.5	68	3.5	36	10.4	6.8	2.9
<b>Sex</b>										
Male	2,489	48.7	708	50	102	4.0	109	15.4	11.5	3.9
Female	2,596	51.3	707	50	90	2.9	122	17.3	13.9	5.8
<b>Race/ethnicity</b>										
Non-Hispanic White	1,801	63	922	65.2	71	3.3	124	13.5	10.2	4.1
Non-Hispanic Black	1,178	11.1	137	9.7	33	3.1	22	16.1	12.1	4.9
Non-Hispanic another race or multiracial	947	10.1	105	7.4	34	4.0	27	25.7	20.1	6.0
Hispanic	1,159	15.8	251	17.7	54	3.7	58	23.1	19.1	6.2
<b>Education level</b>										
High school graduate or less	2,262	39.4	327	23.1	112	4.2	68	20.8	16.1	4.8
Some college	1,640	30.4	631	44.5	60	4.3	101	16	11.8	3.7
College grad or more	1,177	30.2	457	32.3	20	1.4	62	13.6	11.7	9.4
Not reported	6	<0.1	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Marital status</b>										
Unmarried or separated	2,424	45.1	716	50.6	127	4.6	152	21.2	16.4	4.6
Married	2,412	51.5	699	49.4	54	2.2	79	11.3	8.9	5.0
Not reported	249	3.4	0	N/A	11	5.2	N/A	N/A	N/A	N/A
<b>Household income</b>					N/A	N/A				
\$0-\$19,999	875	11.5	220	15.6	50	5.8	58	26.4	19.8	4.4
\$20,000-\$39,999 <sup>^</sup>	1,322	21.4	321	22.7	63	5.0	56	17.5	12.1	3.4
\$40,000-\$74,999 <sup>^</sup>	891	17.7	410	29	32	3.3	59	14.4	11.1	4.4
≥\$75,000	1,356	38.7	464	32.8	25	2.1	58	12.5	10.5	6.0
Not reported	641	10.7	0	N/A	22	2.7	N/A	N/A	N/A	N/A
<b>Savings</b>										
<\$5,000	N/A	N/A	720	50.9	N/A	N/A	155	21.5	N/A	N/A
≥\$5,000	N/A	N/A	695	49.1	N/A	N/A	76	10.9	N/A	N/A
<b>COVID-19 illness</b>										
No	N/A	N/A	1,403	99.1	N/A	N/A	223	15.9	N/A	N/A
Yes	N/A	N/A	12	0.9	N/A	N/A	8	66.7	N/A	N/A
<b>Death of someone close due to COVID-19</b>										
No	N/A	N/A	1,390	98.2	N/A	N/A	222	16	N/A	N/A
Yes	N/A	N/A	25	1.8	N/A	N/A	9	36	N/A	N/A

Notes: \*p<0.1, \*\*p<0.05, \*\*\*p<0.01. Percents are weighted. <sup>^</sup>Income categories for NHANES participants were \$20,000 to \$44,999 and \$45,000 to \$74,999 based on different cut points for income questions. Data on suicidal ideation among those with COVID-19 illness and bereavement are based on small sample sizes.

**Table 2: COVID-19 related stressors and suicidal ideation over the past two weeks (N=1415)**

Variables	PR	95% CI	aPR	95% CI
<b>COVID-19 related stressors</b>				
Lost job	1.6**	1.1 - 2.2	0.9	0.6 - 1.2
Difficulty paying rent	2.3***	1.8 - 3.1	1.5***	1.2 - 2.1
Feeling alone	2.1***	1.6 - 2.6	1.9***	1.5 - 2.4
<b>Age group</b>				
18 to 29	2.3***	1.5 - 3.3	1.3	0.9 - 2.0
30 to 44	1.8***	1.3 - 2.6	1.3	0.9 - 1.9
45 to 59	1.3	0.9 - 2.0	1.1	0.7 - 1.7
≥60	Reference group		Reference group	
<b>Sex</b>				
Male	Reference group		Reference group	
Female	1.1	0.9 - 1.4	0.9	0.7 - 1.1
<b>Race/ethnicity</b>				
Non-Hispanic White	Reference group		Reference group	
Non-Hispanic Black	1.2	0.8 - 1.8	0.8	0.5 - 1.2
Non-Hispanic and another race or multiracial	1.9***	1.3 - 2.8	1.8***	1.2 - 2.6
Hispanic	1.7***	1.3 - 2.3	1.4**	1.0 - 1.8
<b>Income group</b>				
\$0-\$19,999	2.1***	1.5 - 2.9	1.2	0.8 - 1.8
\$20,000-\$39,999	1.4*	1.0 - 2.0	1.0	0.7 - 1.4
\$40,000-\$74,999	1.2	0.8 - 1.6	1.0	0.7 - 1.4
≥\$75,000	Reference group		Reference group	
<b>Education level</b>				
High school graduate or less	1.5***	1.1 - 2.1	1.2	0.9 - 1.7
Some college	1.2	0.9 - 1.6	1.0	0.7 - 1.4
College graduate or above	Reference group		Reference group	
<b>Marital status</b>				
Unmarried or separated	1.9***	1.5 - 2.4	1.3**	1.0 - 1.8
Married	Reference group		Reference group	
<b>Savings</b>				
<\$5,000	2.0***	1.5 - 2.5	1.4**	1.1 - 1.9
≥\$5,000	Reference group		Reference group	
<b>COVID-19 illness</b>				
No	Reference group		Reference group	
Yes	4.2***	2.8 - 6.4	3.5***	1.9 - 6.4
<b>Death of someone close due to COVID-19</b>				
No	Reference group		Reference group	
Yes	2.3***	1.3 - 3.9	1.7*	0.9 - 3.0

Notes: \*p<0.1, \*\*p<0.05, \*\*\*p<0.01. Estimates are prevalence ratios (PR) and adjusted prevalence ratios (aPR) based on Poisson regression analyses with robust variance. The PR is based on a bivariable analyses of each variable and suicidal ideation. The aPR is adjusted for all variables listed in the table. There were small samples of participants with COVID-19 illness (n=12) and bereavement (n=25).

Figure 1: COVID-19 stressors and suicidal ideation

