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# US Suicide Rates and Impact of Major Disasters Over the Last Century

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The potential impact of coronavirus disease 2019 (COVID-19) on US suicide rates has concerned clinicians and public health officials since the start of the pandemic.<sup>1</sup> Against a background of rising US suicide rates over the last 2 decades,<sup>1</sup> COVID-19 has caused substantially higher levels of anxiety, depression, and suicidal ideation, all risk factors for suicide. From the second quarter of 2019 to June 2020, the prevalence of anxiety symptoms tripled in the United States (from 8.1% to 25.5%), and the prevalence of depressive symptoms nearly quadrupled (from 6.5% to 24.3%).<sup>2</sup> Compared to 2018 (referring to the preceding 12 months), suicidal ideation in the past 30 days more than doubled in 2020 (from 4.3% to 10.7%), with particularly steep increases among young people, Black Americans, and Hispanic Americans.<sup>2</sup>

To date, however, predictions of higher overall suicide rates have not come to pass. Total US suicides fell from 47,511 in 2019 to an estimated 44,834 in 2020.<sup>3</sup> Pirkis et al<sup>4</sup> found that California, Illinois, and Texas (4 counties) experienced a significant decline in suicide rates, while Louisiana and New Jersey experienced stable suicide rates during the early months of the COVID-19 pandemic. Suicide mortality also decreased in Maryland.<sup>5</sup> The impact of COVID-19 on US suicide rates appears similar to findings in other high-income and upper middle-income countries.<sup>4</sup>

To understand this seeming paradox, some historical perspective is helpful. While economic dislocation has increased suicide rates, wars and other major events that are associated with greater social cohesion have generally not done so. The current impact of COVID-19 may be affecting various groups in different ways based on differing economic and social experiences.

Over the last century, US suicide rates have generally risen during economic recessions, while they have declined during economic expansions.<sup>6</sup> The Great Depression, for example, was associated with US age-standardized suicide rates increasing markedly by 22.8% from 18 per 100,000 in 1928 to 22.1 per 100,000 in 1932.<sup>6</sup>

By contrast, wars have led to declines in suicide.<sup>7</sup> Historically, the sharpest decrease in US suicide rates occurred during World War II. Overall, Lester<sup>7</sup> found that higher US military participation rates in wars (between 1933 and 1986) were associated with lower suicide rates, but after controlling for unemployment this association was eliminated. Terrorist attacks and other mass catastrophes have also been associated with lower or stable suicide rates.<sup>8</sup> Individuals living within a 150-mile radius of the World Trade Center experienced a significant suicide rate reduction within the first 180 days following the attack.<sup>8</sup>

In a US-wide analysis of all events declared by the US government to be federal disasters (floods, hurricanes, severe storms, tornadoes, and earthquakes) between 1982 and 1989, 377 US counties had been affected by a major natural disaster.<sup>9</sup> There was no significant difference observed in suicide rates between the 36 months pre-disaster (12.33 per 100,000) and 48 months post-disaster time periods (12.38 per 100,000) at the US county level.<sup>9</sup>

Evidence of the impact of pandemics on suicidality is limited. As we previously described,<sup>10</sup> US age-standardized suicide rates fell during the influenza pandemic (1918–1920), averaging 14.7 per 100,000, which was 24% lower than the suicide rates between 1909 and 1917 (19.3 per 100,000). However, following the influenza pandemic, US suicide rates increased by 12% (16.5 per 100,000) compared to the pandemic period.<sup>10</sup> Some suicide rate reductions observed during this time period could also be related to and overlap with US military forces entering into World War I.

A foundational concept in sociology is that suicide rates are more than the collection of individual decisions. As first described by Emile Durkheim,<sup>11</sup> national suicide rates are generally stable, with exceptions during periods of economic and social instability. Durkheim found that suicide increases during times of economic depression due to a lack of social integration and a rise in self-centeredness, as people's material and social circumstances fall well below what they had expected.<sup>11</sup> On the other hand, Durkheim wrote that wars and other social crises result in reduced suicides due to increasing levels of social integration.<sup>11</sup>

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Recent findings from the last century largely align with Durkheim's overall sociologic formulation, suggesting that disasters may have, at the population level, competing effects on suicide. Economic and social dislocation may increase the rate of suicide, but the "pulling together" effect may mitigate or even reduce suicides.

These effects can be experienced differently in different communities. There are early signs that the COVID-19 pandemic has been associated with increased suicide rates among Black Americans, who have also intensely experienced the health and socioeconomic effects of COVID-19.<sup>5</sup> For example, a Maryland study<sup>5</sup> found suicide mortality for White residents was reduced by 45% during the first peak and lockdown of the COVID-19 pandemic but increased among Black residents by 94%. Also occurring during this period was the murder of George Floyd, reflecting the mental health impact of longstanding racism and systemic injustice. Overall, between January 1 and July 7, 2020, suicide rates for White residents were reduced by 24% and increased among Black residents by 6%.

The increase in suicide following the influenza pandemic suggests that when the pulling together effect goes away, there may be more suicides in its wake. Continued vigilance and programmatic attention are therefore essential, especially in the context of ongoing economic uncertainty, political and civil unrest, high COVID-19 mortality rates, high levels of psychological distress, and the disproportionate effects of COVID-19 on different communities.

Further social and economic research is needed to better identify and understand the factors that contributed to an estimated 5.6% decline in US suicides between 2019 and 2020, despite marked population-level increases in anxiety, depressive symptoms, and suicidal ideation.

Similar analysis should be undertaken in other countries. Essential to this effort will be understanding how different experiences during the pandemic explain divergent trends in suicide. Such research should guide intervention efforts to tackle systemic causes of mental health distress and save lives across the world.

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