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State-Level Data on Suicide Mortality During COVID-19 Quarantine: Early Evidence of a Disproportionate Impact on Racial Minorities

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Highlights

- The age-adjusted rate of completed suicides decreased 13% in Connecticut during the period of strict stay-at-home COVID-19 quarantine.

- The proportion of suicide decedents from racial minority groups significantly increased during the lockdown period.

- Further study of completed suicides during and after the pandemic is needed, with exploration of the role of race on suicide trends.

Abstract

The unprecedented impact of COVID-19 has raised concern for the potential of increased suicides due to a convergence of suicide risk factors. We obtained suicide mortality data to assess completed suicides during the period of strict stay-at-home quarantine measures in Connecticut and compared this data with previous years. While the total age-adjusted suicide mortality rate decreased by 13% during the lockdown period compared with the 5-year average, a significantly higher proportion of suicide decedents were from racial minority groups. This finding may provide early evidence of a disproportionate impact from the social and economic challenges of COVID-19 on minority populations.

1. Introduction

As the COVID-19 pandemic has evolved causing unprecedented societal impact, concerns have been raised about the potential for increased suicides during and after the pandemic (Reger et al., 2020; Gunnell et al., 2020). A host of converging factors may contribute to elevated suicide risk, including economic stress from unemployment and potential financial recession (McIntyre and Lee, 2020), increased barriers to mental health treatment, stress for frontline healthcare workers, and surging firearm sales (Reger et al., 2020). There has also been concern regarding the psychological impact of social distancing and quarantine (Brooks et al., 2020), though studies are mixed on whether these measures have resulted in empiric increases in loneliness (Luchetti et al., 2020). While case reports show anecdotal evidence of suicide directly caused by stress from the pandemic (Mamun and Ullah, 2020), very few epidemiological studies have been conducted to assess the rate of completed suicides during the peak periods of the COVID-19 outbreak, and more widespread data sharing is needed (John et al., 2020). Here, we present suicide mortality incidence data during the period of strict stay-at-home quarantine measures in Connecticut, to better understand the impact of the pandemic on suicide rates. Previous literature suggests that suicide is more common in those who are White, middle-aged or elderly, and male (Curtin and Hedegaard, 2019). However, given the disproportionate burden of medical coronavirus outcomes on the elderly and racial/ethnic minorities, (Webb Hooper et al., 2020)

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we also analyzed the demographic characteristics of suicide decedents for potential alterations from baseline rates.

2. Methods

We obtained a retrospective cohort of completed suicides from the Connecticut Office of the Chief Medical Examiner containing date, method, and location of suicide, as well as demographic details of the decedents. We analyzed data during our defined study period from March 10th to May 20th, 2020, as established by the strict stay-at-home quarantine declarations from the state government. Our data was obtained 3 months after the study period to allow for pending medical examiner investigations to be certified and to mitigate using potentially incomplete data. We compared data from this period to the corresponding date range during the previous six years to account for known seasonal variation in suicide rates (Maes et al., 1993). Age-adjusted suicide mortality rates were computed using the direct method and the 2000 US standard population (Klein and Schoenborn, 2001) and then extrapolated per 100,000 person years. Descriptive statistics were obtained using the Stata software program including demographic variables of decedents (race, age, and gender) and method of suicide. The Chi-square test and two sample t-test were used for categorical and continuous variables, respectively, and significance was calculated at p-value<0.05.

3. Results

74 completed suicides were reported in Connecticut during the lockdown period, representing an age-adjusted rate of 9.4 per 100,000 person years. This rate was 20% lower than the previous year and 13% lower than the recent 5-year average, 10.8 per 100,000 person years. Total and race-stratified age-

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adjusted suicide rates are displayed in Figure 1. Notably, the age-adjusted rate for non-Whites during the lockdown period (12.0 per 100,000 person years) was 62% higher than the previous year and represented a 6-year high when compared to the same date range in prior years. In contrast, the rate for Whites during the lockdown period (8.4 per 100,000 person years) was at a 6-year low. Demographic characteristics of suicide decedents and methods of suicide are described in Table 1. Of decedents during the quarantine period, 23.0% identified as non-White (10.8% Black, 8.1% Hispanic, 2.7% Asian, and 1.4% Other). In the corresponding date range in the preceding 6 years, minority groups represented 11.7% of suicides, a statistically significant difference, χ^2 (1, N=569) = 7.1, p=<.01. The proportion of female suicide decedents, the age of suicide victims, and the method of suicide were no different compared with previous years.

4. Discussion

This retrospective cohort analysis showed that the total rate of completed suicides in Connecticut decreased during the peak pandemic quarantine period, despite rising national and state trends in completed suicides and additional risk factors related to the pandemic. Prior literature suggests that suicides decrease during times of war or terror (Salib, 2003; Durkheim, 1897), which may share similarities to the pandemic leading to increased social cohesion during times of external threat. Other potential reasons may include increased social connectedness with loved ones through virtual platforms and a lower barrier to connect with mental health care through telemedicine. Additionally, a fear of death related to the pandemic may have displaced thoughts of suicide.

Despite the overall decrease in age-adjusted suicide rate during the lockdown period, after stratifying decedents by race, additional findings emerged. When compared with the same dates in prior years, the suicide rate during the peak of the outbreak was at a 6-year low for Whites and a 6-year high for non-Whites. Additionally, the proportion of decedents during the study period who were non-White significantly increased and nearly doubled. The reasons for this disparity are likely multifactorial but may include the documented disparate outcomes with COVID-19 for minority groups (Webb Hooper et al., 2020) leading to increased loss of loved ones, economic disadvantages that leave non-White populations more susceptible to financial crises, or stress associated with being forced to work in high-exposure public-facing occupations (St-Denis, 2020). Another possibility may be increased structural barriers to access mental health care for these populations. Our finding may provide early evidence of a disproportionate impact and higher susceptibility to the social and economic challenges resulting from COVID-19 for minority populations.

Limitations include a small sample size, as the Connecticut state-level data accounts for only 1% of the national population. In addition, peak consequences on mental health and suicide rates may be delayed until after the pandemic, which is not captured in this data. Future research directions will include analyses of larger suicide mortality datasets during and after the pandemic, and further exploration of the role of race on suicide trends.

Funding

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Figure 1. Age-Adjusted Suicide Rates by Race in Connecticut During COVID-19 Lockdown Period Compared with March 10th to May 20th in Previous 6 Years

Table 1. Demographic Characteristics and Method of Completed Suicides During COVID-19 Lockdown Period Compared with March 10th to May 20th in Previous 6 Years

Variable	2014-2019 (N=495)	2020 (N = 74)	Test result[a]	p value
Age, mean (SD), years	50.5 (16.8)	50.8 (18.5)	t = -0.18	0.86
Gender, N (%)			χ^2 = 0.02	0.88
Female	123 (24.8)	19 (25.7)		
Male	372 (75.2)	55 (74.3)		
Race, N (%)			χ^2 = 7.13	<0.01
White	437 (88.3)	57 (77.0)		
Non-White[b]	58 (11.7)	17 (23.0)		
Method, N (%)			χ^2 = 6.01	0.11
Suffocation[c]	172 (34.7)	35 (47.3)		
Firearm	138 (27.9)	21 (28.4)		
Poisoning[d]	124 (25.1)	13 (17.6)		
Other[e]	61 (12.3)	5 (6.8)		

SD, Standard deviation; N, number.

[a]Two sample t-test used for age, and Chi-square test used for gender, race, and method.

[b]Non-White refers to Black, Asian, Hispanic, Other, and Unknown.

[c]Suffocation includes death by hanging and asphyxiation.

[d]Poisoning includes ingestion of medications, deadly chemicals, or inhalation of poisonous gas.

[e]Other includes jumping from height, running in front of traffic, self-inflicted stabbing, drowning, and setting fire to self.

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