



# (P0-176) Suicidal Ideation and Behavior During the COVID-19 Pandemic: A Retrospective, Single-Center Case Series

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# **Suicidal Ideation and Behavior During the COVID-19 Pandemic: A Retrospective, Single-Center Case Series**

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**Abstract:**

**Objective:** In the few months since the first cases were reported, the coronavirus disease 2019 (COVID-19) has emerged as a global pandemic and significant source of morbidity and mortality. Case reports from early-hit countries raise concerns for potential worsening behavioral health outcomes, including suicidality, due to infection and/or related psychosocial and financial stressors. Our project offers an early examination of the impacts of the COVID-19 pandemic on suicidality for patients hospitalized at a tertiary hospital in a hard-hit urban area.

**Data Sources and Study Selection:** We performed a retrospective chart review of all hospitalized adult patients who required psychiatric consultation during the first month of the COVID-19 outbreak (March 15, 2020 - April 15, 2020). Charts were reviewed for key demographic factors including COVID-19 infection status, premorbid/active behavioral health and substance use concerns, and presence of suicidality.

**Cases/Results:** We present six cases, outlining important demographic, psychiatric, and psychosocial risk factors for suicidality in the setting of ongoing COVID-19 pandemic. We further contextualize the cases with additional data regarding all COVID-19 related consultations for suicidality during this period.

**Discussion:** Our findings add to the growing literature on psychiatric implications of the COVID-19 pandemic and offer additional insights into potential risks factors for suicidality in vulnerable patient populations, as well as in patients with no premorbid psychiatric issues.

**Conclusion:** To our knowledge, we present the first case series on suicidality coincident with the COVID-19 pandemic in a tertiary hospital setting. Further investigation of the topic is clearly warranted.

## **Introduction:**

Just a few months since the first cases were reported out of Wuhan (Hubei, China), the coronavirus disease 2019 (COVID-19) has emerged as a significant driver of morbidity and mortality worldwide. Most recent reports estimate the total number of severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) infections at over 25,000,000, with deaths greater than 851,000 and significant increases in these figures is expected.<sup>1</sup> Beyond its direct medical impact, the COVID-19 pandemic has dramatically altered the landscape of modern life: distancing efforts aimed at limiting the spread of the disease have led to changes in social dynamics, employment, transportation, resource utilization, and the economy at-large. In addition to its physical toll, a significant psychological fallout from the COVID-19 pandemic is feared, based on similar experiences following prior epidemics, disasters, and global recession.<sup>2-8</sup>

While the scale of the current COVID-19 pandemic is itself unparalleled, its clinical course and societal implications share many similarities with the 2003 outbreak of severe acute respiratory syndrome (SARS). As with COVID-19, management of SARS in affected communities involved an unpredictable and varied public safety response due to its ‘novelty’, as well as compulsory isolation and quarantine with a concurrent immobilization of services.<sup>9,10</sup> In addition to their own health concerns, individuals with or exposed to SARS feared contaminating others, and often faced stigmatization and discrimination.<sup>11</sup> A cohort study of hospitalized SARS patients demonstrated a post-SARS cumulative incidence of psychiatric disorders at near 60%, with highest incidence of post-traumatic stress disorder (PTSD) and depressive disorders.<sup>9,10</sup> Health care workers (HCWs) involved with the treatment of SARS patients were at a particular risk for psychological sequelae, including PTSD; one study reported that 30% of health-care workers involved in SARS care experienced some degree of emotional distress.<sup>9,10,12,13</sup> Suicide

rates were noted to be increased, specifically in adults aged 65 and over, as a result of increased stress/anxiety, fear of contracting the disease, social disconnection, and fear of being a burden to one's family.<sup>14</sup>

Our understanding of the specific impact of the COVID-19 pandemic on suicidality is only beginning to form, but based on historical experiences, it seems reasonable to expect an increase in both ideation and attempts during and in the aftermath of the pandemic.<sup>8</sup> Common themes in emerging reports include concern about infecting family members, social pressure and xenophobia in the setting of upper respiratory symptoms, fear of isolation, unreliable information sources (e.g. social media, word of mouth), inability to safely manage quarantine, and a lack of access to resources (including food, medicines, or health supports).<sup>15-17</sup> First responders have been overwhelmed by fear of infecting their family members, simultaneously facing compassion fatigue and burnout.<sup>18</sup> A recent editorial estimates a worldwide annual increase of 2,135 – 9,570 completed suicides solely due to increase in worldwide unemployment rates, and an even greater increase in overall behavioral health utilization.<sup>19</sup>

As a consultation-liaison psychiatry service at a large general hospital in a hard-hit urban environment, we have provided care for a number of adults presenting with suicidal ideation or behavior directly or indirectly related to the pandemic. Some of these patients have been infected with SARS-CoV-2, others feared infection, or had their lives upended by the social and financial changes engendered by the containment measures. Here we present a case series of suicidality and suicide attempts seen by our service following the emergence of COVID-19 infections in our community, and discuss the overarching themes underlying these attempts. Through each case presented, we hope to identify novel and specific ways in which the pandemic may affect suicide rates, and to explore whether specific patient groups may be at a higher risk for adverse mental

health outcomes, including suicide, as a result of the pandemic. Furthermore, in our clinical analysis of each case, we utilize Durkheim's classic sociological framework on suicidality to better accentuate key social forces (societal integration versus moral regulation) contributing to our patients' behavior.

## **Methods:**

Following institutional review board approval, records were obtained for all adult patients who were (i) admitted to the Massachusetts General Hospital between the dates of March 15, 2020 - April 15, 2020, and (ii) for whom the psychiatric consultation-liaison service was consulted. All extracted records were reviewed by the authors of this study, using a template to extract key clinical data relevant to the study. The specific dates were chosen to coincide with observed increase in reported cases of SARS-CoV-2 infection, as well as governmental implementation of social distancing measures. Initial study inclusion criteria included report of either active suicidal ideation or a recent suicide attempt in the initial psychiatry consultation note. All patients who present to the emergency room are screened for suicidality by the triage nurse, and all admitted patients are screened again as part of the nursing admission packet. All patients who screen positive for suicidal ideation on admission receive a psychiatric consultation. Subsequently, charts were further reviewed for clarification that the suicidality occurred in the setting of active SARS-CoV-2 infection or as a response to the pandemic. Specifically, consultation notes were reviewed for suicidality emerging as a direct result of patient experiencing worsening symptoms of infection, or testing positive for SARS-CoV-2, or as a reaction to social, psychologic or economic factors related to the pandemic, including fears of

contracting/disseminating the infection, worsening negative emotional states due to social distancing/isolation, economic concerns, and reduced access to psychiatric resources/community supports. Additional demographic and clinical features, including SARS-CoV-2 infection status, age, gender, and premorbid psychiatric and substance use history (including prior suicide attempts or self-injurious behavior) were collected whenever available. Other key variables—including ethnicity, active insurance and employment status – were omitted from analysis due to intermittent and inconsistent reporting.

## **Results:**

Following approval by the Partners Healthcare Institutional Review Board, 207 individual psychiatry consultation requests were identified during the time-period of the study. Of these, 152 records were excluded from further analysis as the initial psychiatry consultation notes did not indicate presence of active suicidal ideation or a suicide attempt. Two additional records were excluded as being duplicate consultation requests on an existing patient already followed by the service. Further chart-review of the remaining 53 initial consultation notes by two authors (M.N. and E.S.) identified 30 records for whom suicidality appeared unrelated to the ongoing pandemic, and these were further excluded.

We identified 23 patients with COVID-related concerns as contributors to their suicidality. Of these, 7 presented following a suicide attempt (30.4%), while the remaining 16 patients presented with suicidal ideation (69.6%). Eight of the 23 patients (34.7%) tested positive for SARS-CoV-2 by polymerase chain reaction (PCR), suggesting acute infection. Additional basic demographic information, as well as prior psychiatric history for all 23 patients is



presented in Table 1. Furthermore, to better illustrate the key narratives driving patients to suicidality, we specifically singled out six cases, and present these in Table 2. These cases were selected by the authors for their ability to reflect the complex demographic, socio-economic, medical and psychiatric variables our diverse patient population faced during this period, with strong emphasis on the key factors that may contribute to emergence of acute suicidality.

### **Discussion:**

Our chart review identifies several important demographic, psychological, and social factors that may contribute to the emergence of suicidality during the pandemic, and lends support to some of the major themes described in literature thus far: While the COVID-19 infection has a disproportionately severe outcome in older adults, most patients referred to our service for suicidality were younger than 60 (21 patients, 91.3%). More male patients presented with suicidality (16 patients, 69.6%); this discrepancy was further apparent once lack of stable housing was factored in, as 10 of 11 patients noted to be undomiciled were male. Premorbid psychiatric history was noted in a majority of the cases (17 patients, 73.9%), as was prior history of suicidal ideation (13 patients, 56.5%). Mood disorders were the most commonly noted diagnostic category, followed by anxiety (including PTSD), thought, and personality disorders. Substance use was noted in majority of the cases (13 patients, 56.5%), with nearly half of the patients disclosing to using more than one psychoactive substance at the time of admission.

Some of the major clinical and social themes identified in recent literature are present here, including impact of isolation, fear of contracting the virus and/or infecting loved ones, and anxiety and shame related to the financial fallout of the pandemic. Psychosocially disenfranchised individuals may be at higher risk for contracting the virus through inability to

safely socially distance and, with higher rates of pre-existing psychiatric co-morbidities, may also likewise experience higher rates of acute psychopathology in the setting of poor distress tolerance and limited supports. The impact of isolation and reduced community supports on vulnerable individuals as apparent driver to suicidality is illustrated through cases 5 and 6.

Individuals with no premorbid psychiatric history may likewise present with worsening mood symptoms and suicidality during the pandemic. Poor health literacy or limited English proficiency may contribute to an inaccurate (and even fatalistic) understanding of the disease process when primary sources of information are social media reports and/or word-of-mouth.<sup>16,17</sup> Economically marginalized individuals, many of whom work hourly-wage jobs (with or without health benefits) and live in densely populated areas, may be particularly impacted by job volatility, have more difficulty enacting effective social distancing (e.g. crowded apartment buildings, multigenerational households), and encounter greater barriers in accessing healthcare (e.g. lack of insurance coverage, fear of U.S. Immigration and Customs Enforcement [ICE], no paid time off [PTO] policies). These narrative points are apparent in cases 1, 2 and 4, and warrant particular consideration given the absence of premorbid psychiatric illness and suicidality across all three cases.

Even for those with more secure jobs, occupation-related exposure may present a major source of stress and psychopathology. As illustrated by case 3, essential workers (including HCWs) facing repeated exposure to the virus may be at an increased risk for worsening anxiety, mood symptoms, and even suicidality due to the pandemic.<sup>9,10,20</sup> Particularly at the start of the pandemic, HCWs were expected to treat a novel disease process without a clear cure, and in the process bear witness to significant morbidity and mortality. Furthermore, HCWs face significant changes to their work environments (e.g. re-deployment to surge coverage teams), and may even

experience uncertainty regarding the access to adequate personal protective equipment. This stress may be further amplified with worries about infecting vulnerable family members or children. Whether the front-line workers access support or due to shame, guilt, or stigma continue to ‘soldier on’ in the face of such stress and caregiver fatigue can have potentially dire ramifications, as illustrated both by the aforementioned case reports and the case we describe here.<sup>18</sup>

To further synthesize the information presented across the six key cases, we utilized Durkheim’s classic sociological framework on suicidality.<sup>21</sup> In this work, four presentations are described, each with specific motivators that may contribute to emergence of suicidality. Suicide is obviously a complex, multiply determined desire and act. We do not seek a one-dimensional categorization of COVID-19-related suicidality by Durkheim’s scheme, and in fact, find that more than one categorization appears of relevance for a number of our cases. However, we do find that it offers insight into some of the key motivators and differences among our patients, especially those without prior suicidality or psychiatric history.

*Fatalistic suicidality* is described in settings where an individual may feel excessively regulated, or find their futures, interests and goals overwhelmingly obstructed by external forces. The pandemic, and particularly its attendant social restrictions and financial implications, apply here. Cases 1 and 2 identified financial concerns as a key motivator for attempting suicide. Furthermore, both patients described significant shame and guilt at not being able to provide for family members. The fear of becoming infected, especially when driven by social demands (e.g., HCWs) or deficiencies (e.g., poor health literacy, misinformation, lack of access to mental health care) may likewise present an overwhelming repressive force. This is apparent in Case 4, where a patient with underlying mild anxiety symptoms became acutely anxious following a brief

interaction with an individual displaying symptoms of COVID-19, ultimately leading to profound behavioral dysregulation and fatalistic thinking, all culminating in attempted suicide by stabbing. The fatalistic impulsivity of the attempt is further underlined by patient's rapid clinical improvement following negative testing for SARS-CoV-2 during his hospitalization on the surgical service.

*Altruistic suicidality* is described in the setting where an individual may find themselves compelled toward suicide in accord with the (actual or perceived) values of their social group or subgroup. Although relatively uncommon in most circumstances, altruistic suicidality is an apparent driver in multiple cases we describe here (Cases 1, 3, and to some extent case 6). In all three cases, our patients identified the fear of exposing their dependents (i.e. spouses, parents, and/or children) to the virus as a major factor in their consideration of suicide. We suspect that front-line workers, including any individuals whose employment involves risk of repeated exposure to the virus, may be particularly vulnerable. Notably, first-line responders may exhibit high baseline rates of altruism, which, though normally adaptive, have the potential to become maladaptive, as demonstrated by Case 3. Furthermore, while Durkheim framed altruistic suicidality within permissive/encouraging societal norms (e.g. hara-kiri, or sacrificing oneself on the battlefield to protect others), it is worth noting that examples of altruistic suicidality presented here all reflect patients' *misperceptions* of the societal value system (e.g. suicidality would be a noble act for under the circumstances) rather than an actual change in social norms/expectations.

*Egotistic suicidality* occurs in the setting of a breach in one's strongly valued social group affiliation(s), giving rise to apathy, melancholy, depression and meaninglessness. This is a key driver to suicidality for case 6. The patient has a history of underlying psychiatric vulnerability,

including PTSD, and found her symptoms acutely worsening in the setting of social isolation efforts (increasing a sense of non-belonging as well as entrapment) and worries about spreading the infection to her loved ones. She was thus denied access to her broad and personal social affiliations.

Finally, *anomic suicidality* is identified when an individual experiences significant moral confusion, lack of social direction or uncertainty where they fit into the society. The values of a society the individual felt bound with have changed in a way they are radically unable to identify with any longer. Classically ascribed to cases of politically-motivated suicide (e.g. public self-immolation), anomic suicidality is not well-captured in this series. Case 2, with patient's transition to sudden poverty, may present such an acute moral crisis leading to emergence of normlessness and suicidality. We speculate that anomie and associated suicidality may only increase in the aftermath of the pandemic; especially should significant social and financial repercussions follow.

A fifth type of suicidality, not described by Durkheim yet well-illustrated through case 5, bears mentioning: that of a deception syndrome presenting as suicidality. Deception syndromes—encapsulating factitious disorder and malingering behavior—involve the conscious feigning or exaggeration of psychiatric symptoms for intangible or tangible gains.<sup>22</sup> Deception syndromes are not necessarily malignantly motivated, and identifying the person's motives is as important as identifying the syndrome itself. Our chart review identified deception syndrome as a potential diagnostic consideration in 13 of the 23 charts reviewed (56.5%). Specifically, we considered this possibility when patients explicitly indicated that their initial report of suicidality was motivated by lack of access to housing or resources and later recanted their suicidality, noting that it had been an intentional choice used to signify distress rather than representing an

accurate description of their thoughts or intent. Akin to the case presented, the majority of the patients were noted to be male, undomiciled, with history of substance use and high utilization of behavioral health services (including multiple prior self-presentations for reported suicide attempts). In cases like case 5, treatment of active substance use and attempts to address housing barriers (i.e. identification of shelters/respite sites for SARS-CoV-2-positive patients) were the most essential clinical interventions, commonly resulting in rapid recanting of suicidality.

In addition to the factors described above, it is worth considering the potential for SARS-CoV-2 infection to impact emotion and behavior directly. Two recent case series describe high rates of neurocognitive syndromes in patients with SARS-CoV-2 infection admitted to the hospital (36%) and, specifically, intensive care units (85%).<sup>23,24</sup> Some of the key clinical features reported include agitation (69%) and executive dysfunction (36%); altered cognition for some patients may persist even at the point of hospital discharge.<sup>24</sup> The exact mechanism by which infection with SARS-CoV-2 leads to encephalopathy remains unclear but may include direct invasion of the CNS by the virus or secondary effects of systemic infection, including cytokine storm.<sup>25,26</sup> Furthermore, reports of *de novo* psychosis and catatonia associated with COVID-19 infection are emerging.<sup>27-29</sup> This literature raises the possibility that some of the neuropsychiatric symptoms we describe here, including impulsivity, depressed mood and even suicidality, may be a consequence of the CNS involvement of SARS-CoV-2. Further understanding of the disease process, including extent of direct and indirect CNS impacts, are needed to fully understand the implications for patients with suicidality in the setting of active infection.

Our case series has several important methodological limitations that warrant acknowledgment. First, the retrospective and observational nature of this project raises risk for incomplete detection; we unfortunately miss all individuals living in the community with suicidal

thoughts or who have completed suicide without the possibility of medical intervention. Second, though we present data related to the larger sample of cases involving suicidality, our lack of a comparison group and our decision to focus discussion on key case report narratives may bias conclusions about the impact of COVID-19 pandemic on suicidality. The retrospective nature of the project, our choice to focus on a small patient sample and the resulting case series format all limit us from making any conclusions generalizable to the community at large. To better understand the impact of the COVID-19 pandemic on suicidality in the general population, additional research is needed, including prospective work on the key demographic and psychosocial contributors identified here.

### **Conclusion:**

We offer, to our knowledge, the first attempt to describe factors impacting suicidality during the COVID-19 pandemic in a tertiary hospital setting in the US. Prior experiences from epidemics, disasters, and global recessions warn that a spike in adverse mental health outcomes, including suicide attempts, can be expected during this pandemic and its aftermath. Direct effects of the virus as well as social impacts of the pandemic will both cause and exacerbate psychiatric symptoms. As the numbers of SARS-CoV-2-positive individuals and acute stressors linked to the pandemic multiply, an increase in suicidal ideation, attempts and completions linked to the pandemic is a serious and real threat. Understanding motivation for suicidality, including factors potentially unique to the pandemic, will help us form a better understanding of patients' behaviors, enhance alliances with the patient and consultees, and assist in identification of appropriate treatment goals. While the scope of this project is limited, real-time changes made by

our institution and the local government in parallel to our case series likely helped address some of the needs and risk factors we identify here. This includes attempts to optimize access to testing and self-care services in the hardest-hit communities, city-wide attempts to ensure safe isolation of SARS-CoV-2-positive individuals (including a 1000-bed facility providing emergency housing and medical care for undomiciled patients), and lastly, institutional outreach (including increased access to behavioral health services) for the hospital essential workers at the frontlines of the pandemic.

### **Clinical Points:**

- With growing numbers of cases of COVID-19, there are concerns for worsening behavioral health outcomes, including suicidality, as the result of the pandemic, or its indirect implications.
- The pandemic increases strain on already-vulnerable patient populations, including those with pre-existing mental health and addiction concerns. Furthermore, additional populations may be at increased risk for adverse behavioral outcomes, including those in first-responder positions.

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