

Is Suicidality Increased in Covid-19 Pandemic? A Scoping Review and Quality Assessment

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ABSTRACT

Background: There are emerging concerns that the COVID-19 pandemic may specifically increase suicide.

Methods: Scoping Review in the MEDLINE/PubMed, SCOPUS, Web of Science, PsycINFO, Science Direct databases and in the medRxiv, bioRxiv and PsyArXiv preprint servers, using the descriptors “Covid-19”, “coronavirus infection”, “coronavirus”, “2019-nCoV”, “2019 new coronavirus disease”, “SARS-CoV-2”, “Suicide”, “General Public” and “Mental Health”.

Results: A total of 62 studies were included in this review, where 10 studies were reported to have been conducted between March and May 2021; 39 in 2020; 4 in 2019; 3 in 2018; 1 in 2015; 2 in 2014; 2 in 2010 and 1 in 2004, all were conducted via online platforms.

Limitations: We have interpreted our study findings in the context of the overall significant risk of exposure to suicide in our study population, while recognizing that individual level data of exposure to COVID-19 is a significant confounding variable.

Conclusions: Being one of the first reviews in this context, the findings are anticipated to be helpful to predict the possible solutions for reducing the number of suicides in and facilitate further studies on strategies of how to alleviate such a stressful situation in COVID-19.

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Introduction

Suicide is a dangerous and complex event causing 2% of human mortality. It remains an enigma and further studies on the topic are indispensable. Apart from mortality, huge resources have to be allocated towards the prediction, prevention and medical management of suicide [1]. With the added economic, social, and personal burdens imposed by the pandemic, many populations worldwide may experience increased suicide risk [2].

Suicide prevention in the COVID-19 era requires addressing not only pandemic-specific suicide risk factors (eg, increased social isolation, personal and economic losses), but also prepandemic risk factors (eg, the increasing service gap between mental health needs and effective health care). Importantly, these factors

may interact in previously unexplored ways. For example, an established suicide risk factor (eg, access to lethal means) has increased during the pandemic [3]. The mental health effects of the coronavirus disease 2019 (COVID-19) pandemic might be profound and there are suggestions that suicide rates will rise, although this is not inevitable [4,2].

The pandemic could adversely affect other known precipitants of suicide. For example, domestic violence and alcohol consumption might increase during lockdown. Public health responses must ensure that those facing interpersonal violence are supported and that safe drinking messages are communicated. Social isolation, entrapment, and loneliness contribute to suicide risk [5]. The COVID-19 epidemic has caused a parallel epidemic of fear, anxiety, and depression. People with mental health conditions could be more substantially influenced by the emotional responses brought on by the COVID-19 epidemic, resulting in relapses

or worsening of an already existing mental health condition because of high susceptibility to stress compared with the general population [6]. With the increasing number of infected cases and deaths, many patients experienced both physical suffering and great psychological distress [7].

Suicide attempters need to be consistently and thoroughly evaluated, especially during and after the COVID-19 era. Also, individuals with a history of psychiatric hospitalization are at elevated suicide risk [8]. Is suicidality increased in COVID-19 survivors? [9]. Recent research indicates that the COVID-19 survivors frequently have posttraumatic stress disorder, depression, anxiety, obsessive–compulsive symptoms, and insomnia [10,11]. Recent research indicates that the COVID-19 survivors frequently have posttraumatic stress disorder, depression, anxiety, obsessive–compulsive symptoms, and insomnia [12].

Public health measures necessitated by COVID-19 may thus drive the development of anomie, which has repercussions for social connectedness, overall mental health and specific adverse consequences such as increased suicide rates. There are emerging concerns that the COVID-19 pandemic may specifically increase suicide rates due to the combination of economic stress, social isolation, barriers to receiving mental health treatment and increased levels of national anxiety [13]. Actions could be taken to mitigate potential unintended consequences on suicide prevention efforts, which also represent a national public health priority.

Method

It is a systematic scoping review, which followed the recommendations of the Joanna Briggs Institute -JBI [14]. For the formulation of the research question, the PCC strategy was used, an acronym for “population” (P), “concept” (C) and “context” (C): what symptoms of suicide are present in the general population in the context of the Covid-19 pandemic? Accordingly, the methodology is described in the following stages:

- Stage 1. Identifying the research question,
- Stage 2. Searching for relevant studies,
- Stage 3. Selection of studies,

- Stage 4. Charting of data,
- Stage 5. Collating, summarizing, and reporting the results

Stage 1: Identifying the Research Question

All reviewers contributed to refining the research question through frequent discussions and pilot searching.

Stage 2: Searching for Relevant Studies

Having specific criteria for searching the relevant articles is a requirement to answer the question framed for any scoping review. Hence, following the inclusion criteria were decided on for the scoping review by all the reviewers.

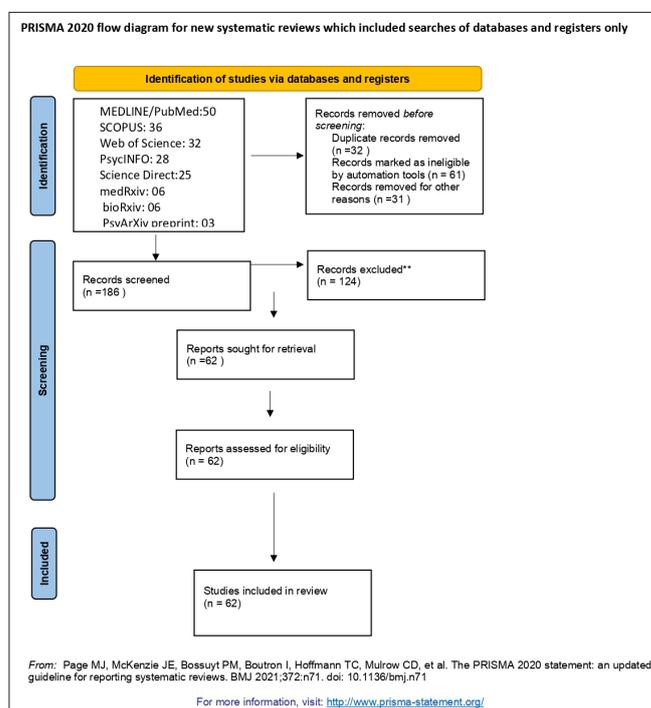
Stage 3: Selection of Studies

MLRN and KVCCS reviewed titles and abstracts to identify the first set of articles relevant to our research question. Any kind of disagreement was resolved after consulting with JGAMF. If any disagreement still existed, then the article titles were still included in the initial list.

The reviewers MLS and KVCCS blindly reviewed the abstracts included in the first list, and in case of any disagreement, reviewers JGAMF and NNRL were approached for finalizing the decision. The full text of all the articles included in the first list was searched for. All possible ethical ways (such as contacting the author, requesting the library) were tried to obtain the full text of any article that was not available freely on search. The final version of full-text articles was blindly reviewed by MKLRN, GCAS, MLS, NNRL and JGAMF independently. If the reviewers came up with any discrepancies, the matter was discussed and finalized with consultation from MM.

Stage 4: Charting of Data

Data extraction criteria of the present scoping review were determined, and a self-designed data extraction form was designed by consultation of the reviewers before aiding the process. The included articles were reviewed in full-text and summarized under the headings as mentioned in Figure 1. The reviewers independently summarized the findings and cross-checked with each other, and the final outline is presented in figure 2 and 3.



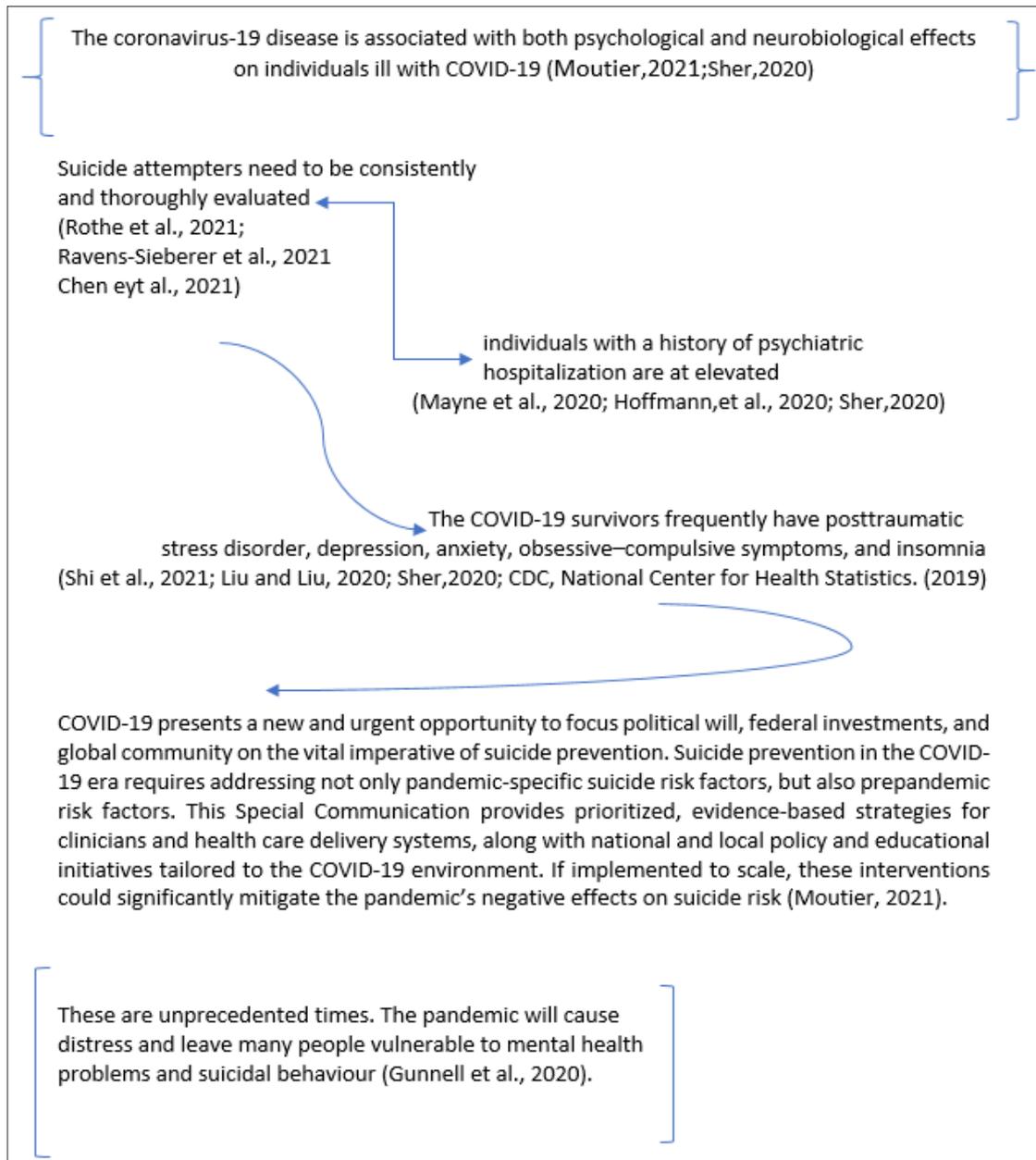


Figure 2: Informational data synthesis

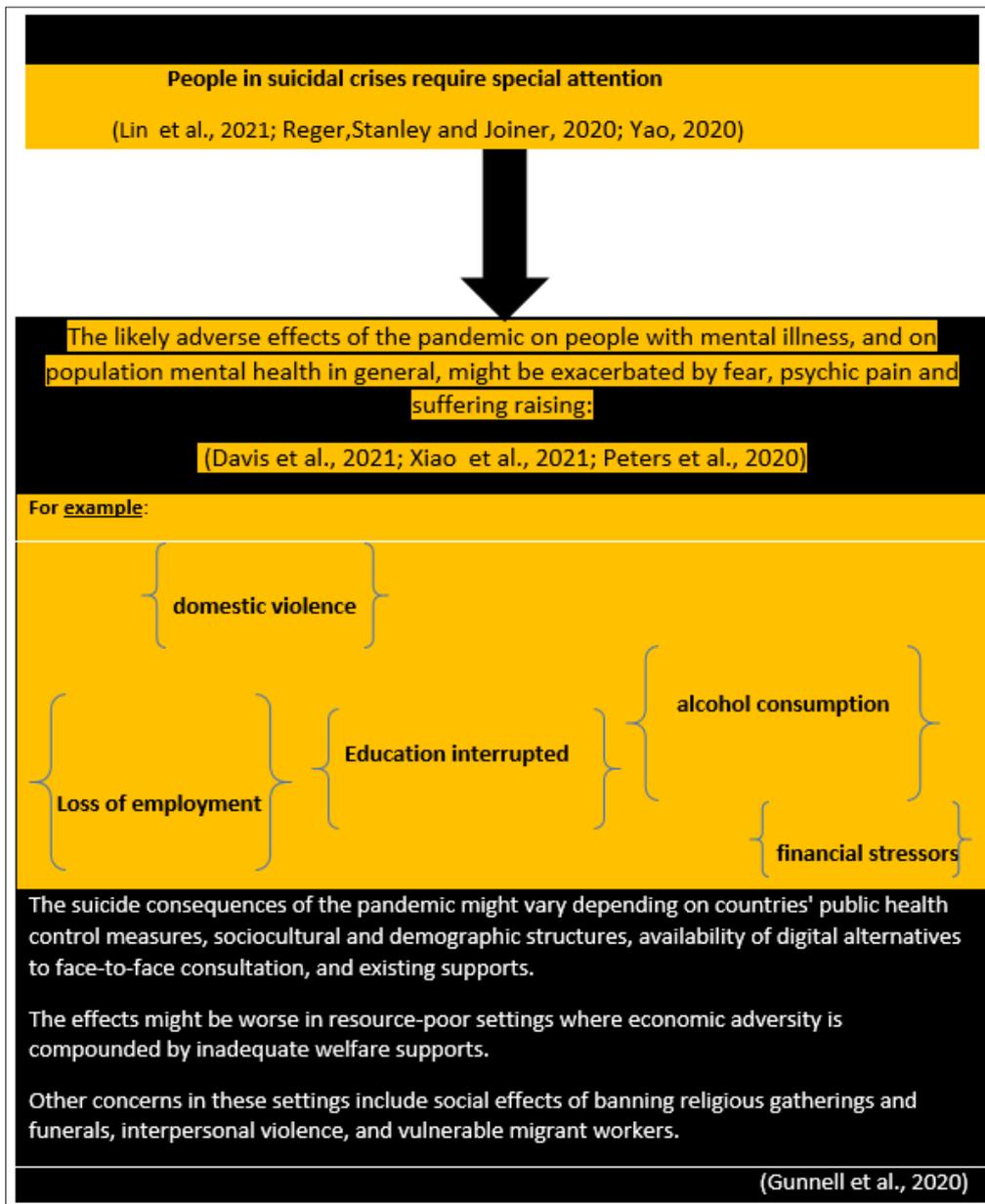


Figure 3: Qualitative Synthesis

Results

Description of the Included Studies

A total of 62 studies were included in this review, where 10 studies were reported to have been conducted between March and May 2021; 39 in 2020; 4 in 2019; 3 in 2018; 1 in 2015; 2 in 2014; 2 in 2010 and 1 in 2004, all were conducted via online platforms. Most of the studies were conducted among the general adult population, conducted among children and adolescents (mean age = 15.4 years), among college students (mean age = 19.6 years) and Elderly.

Measures Used in the Studies

Fourteen suicidal attitude scales and 15 scales for assessing suicidal ideation were identified [3,2,15,16]. (Suicide Opinion Questionnaire (SOQ): The questionnaire contains 100 items that ask respondents attitude in eight domains; Multi-Attitude Suicide Tendency Scale (MAST); Attitudes Toward Suicide Scale (ATTS); Attitudes Towards Attempted Suicide Questionnaire (ATAS-Q); Attitudinal Beliefs Towards Suicidal Behavior Scale (CCCS-

18); Chinese Attitude Towards Suicide Questionnaire (CASQ-HK); Suicide Behavior Attitude Questionnaire (SBAQ); Suicide Attitude Vignette Experience Scale (SAVE); Semantic Differential Scale Attitudes towards Suicidal behavior (SEDAS); Suicide Attitude Questionnaire (SUIATT); Attitude Towards Suicide Scale (ATSS); Suicide Attitudes and Attribution Scale (SAAS); General Social Survey's four questions (GSS4); Scale of Public Attitudes about Suicide (SPAS); Paykel's questionnaire; Suicidal Ideation Questionnaire (SIQ); Adulte Suicidal Ideation Questionnaire (ASIQ); Suicidal Behavior Questionnaire (SBQ); Suicide Ideation Scale (SIS); Suicidal Ideation Screening Questionnaire (SIS-Q); Beck Scale for Suicide Ideation (BSSI); Modified Scale for Suicide Ideation (MSSI); Suicide Probability Scale (SPS); Positive and Negative Suicide Ideation (PANSI); Suicidal Behaviors Questionnaire—Revised (SBQ-R); InterSePT Scale for Suicidal Thinking (ISST); Geriatric Suicide Ideation Scale (GSIS); Columbia Suicide Severity Rating Scale (C-SSRS); Five-item Brief Symptom Rating Scale (BSRS-5).

The range of questions in the identified measures and their inherent variations are stemmed from broad range of attitudes that might exist towards suicide.

Factors Associated With Fear of COVID-19

A recent study in the context of COVID-19 determining youth's susceptibility for high risk for psychosis emphasizes stress sensitivity, diathesis-stress model, and cognitive biases as the potential factors [17,13,18].

Dysfunctional thought patterns and cognitive errors of catastrophic thinking, magnification, arbitrary inference, and mind-reading have been reported in cases of suicide after stressful life events [19-21]. Older adults who are not very familiar with the use of technology-based interfaces for communication might experience social cut off and loneliness [17].

Fear of COVID-19 Among Children and Adolescents

Rates of mental health concerns among adolescents, including depression and suicidal ideation, have risen substantially in recent years [22,23]. The coronavirus disease 2019 (COVID-19) pandemic has placed numerous stresses on adolescents because of school closures, disruptions of routines, social isolation, and concerns about family illness and economic impacts [24]. Consequences of these stressors among children from racially and ethnically minoritized and low-income communities may be especially acute [25,26]. Researchers in several studies have reported high prevalence of mental health concerns among children and adolescents during the pandemic [27-30]. However, few studies to date have examined changes in depression and suicidality, as well as changes in screening for these concerns, among adolescents from before to during the pandemic [31]. Increases were most pronounced among female adolescents for both depression and suicide risk screening, with some indication of increases among non-Hispanic white and non-Hispanic Black adolescents. Given these patterns, pediatricians are encouraged to consistently screen adolescents for depression and link identified adolescents to treatment. Additionally, advocacy and effort on the part of primary care practices is needed to ensure adolescents are screened and linked to treatment and that existing gaps between the identification of depression symptoms and/or suicide risk and initiating (and sustaining) treatment are filled, including known barriers to receiving treatment faced by non-Hispanic Black adolescents [31-33].

Fear of COVID-19 Among Students

Suicide is the second leading cause of death for college-aged individuals worldwide and in the United States. Recent studies have identified preliminary evidence of widening disparities in suicidal behaviors across sex, sexual orientation, race/ethnicity, age, and socioeconomic status among college students. Few systematic reviews and meta-analyses offer a comprehensive understanding of on-campus and off-campus suicide interventions, nor is collated information available for different types of screening, assessment, treatment, and postvention plans. Further challenges have been identified since the COVID-19 pandemic, calling for cost-effective and innovative interventions to address increased rates of suicidal behaviors among college students facing unprecedented stressors [34].

Despite increasing rates of suicidal behaviors among college students, few preventative efforts have targeted this population, and fewer focus on factors that might place specific demographic groups at heightened risk. The impact of COVID-19 on suicidal behaviors among college students highlights and exacerbates the

urgent need for rapid and effective interventions that might differ from traditional approaches [35-37].

Fear of COVID-19 Among General Population

People who were more attentive to information on the pandemic and had a better understanding of its consequences had a lower prevalence of suicidal ideation. However, other researchers have reported a positive link between information exposure to COVID-19 and emotional distress [6]. This discrepancy may be due to the source of the information and may also be influenced by personal COVID-19-related experiences [36]. Specifically, having reliable knowledge about psychological interventions was a protective factor against the severity of suicidal ideation during the COVID-19 pandemic [38].

Furthermore, digital technology and social media can greatly enhance the quick dissemination of time-sensitive health information in pandemics and is particularly useful to reach young adults who were proven to be vulnerable populations of suicidal ideation [39].

Fear of COVID-19 Among Adults

Elevated levels of adverse mental health conditions, substance use, and suicidal ideation were reported by adults in the United States. The prevalence of symptoms of anxiety disorder was approximately three times those reported in the second quarter of 2019 (25.5% versus 8.1%), and prevalence of depressive disorder was approximately four times that reported in the second quarter of 2019 (24.3% versus 6.5%) (National Center for Health Statistics – DCC, 2020). However, given the methodological differences and potential unknown biases in survey designs, this analysis might not be directly comparable with data reported on anxiety and depression disorders in 2019 [40,41].

Mental health conditions are disproportionately affecting specific populations, especially young adults, Hispanic persons, black persons, essential workers, unpaid caregivers for adults, and those receiving treatment for preexisting psychiatric conditions [42].

Fear of COVID-19 Among Older Adults and Elderly

The adverse effects of isolation may be especially felt by older people and people with preexisting mental illness [43,44]. Living alone, loneliness, and social isolation are well-recognized risk factors for suicide in late life [45].

In a pandemic environment of social lockdown, older people may be especially vulnerable to suicide through a heightened sense of disconnectedness from society, physical distancing, and loss of usual social opportunities, as well as greater risk of anxiety and depression [46]. This may be compounded by feeling devalued or burdensome to society with the explicit knowledge that older people may not receive the health care they need due to resource rationing [45,47].

Discussion

Access to means is a major risk factor for suicide. In the current environment, certain lethal means (eg, firearms, pesticides, and analgesics) might be more readily available, stockpiled in homes. Irresponsible media reporting of suicide can lead to spikes in suicides [48]. Repeated exposure to stories about the crisis can increase fear and heighten suicide risk [49]. Comprehensive responses should be informed by enhanced surveillance of COVID-19-related risk factors contributing to suicidal behaviours. Some suicide and self-harm registers are now collecting data on COVID-19-related stressors contributing to the episode; summaries of these data will facilitate timely public health responses [2]. It is

possible that the 24/7 news coverage of these unprecedented events could serve as an additional stressor, especially for individuals with preexisting mental health problems [13].

The pandemic could adversely affect other known precipitants of suicide. For example, domestic violence and alcohol consumption might increase during lockdown. Public health responses must ensure that those facing interpersonal violence are supported and that safe drinking messages are communicated. Social isolation, entrapment, and loneliness contribute to suicide risk and are likely to increase during the pandemic, particularly for bereaved individuals [2,5].

Since the COVID-19 crisis, businesses have faced adversity and laying off employees. Schools have been closed for indeterminable periods, forcing some parents and guardians to take time off work. The stock market has experienced historic drops, resulting in significant changes in retirement funds. Sustained economic stress could be associated with higher US suicide rates in the future [13].

Exacerbated physical health problems could increase risk for some patients, especially among older adults, in whom health problems are associated with suicide (CBS News, 2020). Many studies document elevated suicide rates among medical professionals [50]. Of particular concern in the US, firearms purchases increased by 85% during March 2020 at the start of COVID-19, compared with previous years during March [51].

Particular groups are more likely to have elevated suicide risk during COVID-19 because of baseline vulnerabilities, inequitable effects of the pandemic, or for reasons that present barriers to disclosing hardships and seeking help. These include people with lower access to mental health care, especially for those with mental health conditions at baseline or other suicide risk factors; people in unsafe homes related to domestic violence or abuse; people with socioeconomic disadvantage, from rural areas, or marginalized racial/ethnic and sexual groups, all for whom economic, educational, and health disparities are being accentuated by the pandemic; frontline health and essential workers; youth and elderly populations; parents with school-age children; and male individuals. People who represent intersectionality across risk areas are of particular concern [3].

There is a risk that prevalence of clinically relevant numbers of people with anxiety, depression, and engaging in harmful behaviours (such as suicide and self-harm) will increase. Of note, however, is that a rise in suicide is not inevitable, especially with national mitigation efforts. The severe acute respiratory syndrome epidemic in 2003 was associated with a 30% increase in suicide in those aged 65 years and older; around 50% of recovered patients remained anxious; and 29% of health-care workers experienced probable emotional distress [52-54].

Suicide prevention in the COVID-19 era requires addressing not only pandemic-specific suicide risk factors (eg, increased social isolation, personal and economic losses), but also prepandemic risk factors (eg, the increasing service gap between mental health needs and effective health care). Importantly, these factors may interact in previously unexplored ways. For example, an established suicide risk factor (eg, access to lethal means) has increased during the pandemic [3].

Whether using established or new cohorts, priority should be given to methods that can ascertain COVID-19 status, symptoms,

and behaviours in as close to real-time as possible, providing a dynamic picture of change in illness status, social circumstances, and behaviours. Questions regarding COVID-19 and mental health symptoms and social stressors can readily be disseminated through smartphones. Passive data from smartphones can also give high temporal resolution to behaviours related to the pandemic. Cohorts should gain permissions for the linkage of records, including serological status, when mass testing becomes available, and consent for recruitment into nested substudies, including randomised trials of interventions [4].

Concluding Remarks

These are unprecedented times. The pandemic will cause distress and leave many people vulnerable to mental health problems and suicidal behaviour. Mental health consequences are likely to be present for longer and peak later than the actual pandemic. However, research evidence and the experience of national strategies provide a strong basis for suicide prevention. We should be prepared to take the actions highlighted here, backed by vigilance and international collaboration [2].

The immediate priority is the collection of high-quality data on the mental health and psychological effects of the COVID-19 pandemic across the whole population and in specific vulnerable groups, and on brain function, cognition, and mental health for patients with COVID-19 at all clinical stages of infection and illness. These datasets must be brought together under a national data portal for rapid access and use. There is an urgent need for the discovery, evaluation, and refinement of mechanistically driven interventions to address the psychological, social, and neuroscientific aspects of this pandemic. This includes bespoke psychological interventions to boost wellbeing and minimise mental health risks across society, including in vulnerable groups, and experimental medicine studies to validate clinical biomarkers and repurpose new treatments for the potentially neurotoxic effects of the virus [4].

Concerns about negative secondary outcomes of COVID-19 prevention efforts should not be taken to imply that these public health actions should not be taken. There are opportunities to enhance suicide prevention services during this crisis [55].

Therefore, considering the negative impact of depression and anxiety on daily life and health outcomes, timely screening and appropriate interventions, such as online psychological counseling tailored for concerns specific to adolescents, are urgently needed to reduce the likelihood of emotional disturbances among adolescents during and after the initial COVID-19 outbreaks [56-61].

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