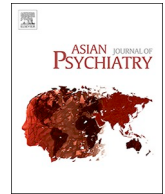




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Letter to the Editor

A framework to deal with uncertainty in the age of COVID-19



As of 20 May 2020, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which causes viral pneumonias and the Coronavirus Disease 2019 (COVID-19) in humans, has infected more than five million individuals and resulted in more than 300,000 deaths worldwide (Worldometer, 2020). It has already had an immense socio-economic impact on health systems and communities and posed a huge challenge to governments across the globe (Walker et al., 2020).

Uncertainty seems to be a constant in this evolving pandemic. Our current understanding of the SARS-CoV-2 is still limited, especially with regard to the epidemiologic features of the virus (Wang et al., 2020). We are 'assaulted' with new (and even contradictory) findings and interpretations on an almost daily basis. Research studies are being published at a feverish pace (Laine et al., 2020); researchers have now highlighted and then disputed a previously underappreciated reservoir of asymptomatic 'spreaders' (Gandhi et al., 2020; Wei et al., 2020).

There is also no definitive treatment or vaccine at present. Many have touted the efficacy of hydroxychloroquine despite the lack of rigorous clinical data (Molina et al., 2020). This can be seriously confusing and dangerous for the layperson. In an extreme example, an Arizonian man died from consuming a form of chloroquine used to clean aquariums, days after the anti-malarial drug was touted by some as a potential cure for COVID-19 (Waldrop et al., 2020). Governments worldwide have also adopted an assortment of approaches, from the partial or complete closures of public facilities and spaces, rigorous contact tracing to a less intensive approach, albeit with variable success (Forman et al., 2020). To limit the human and economic costs of COVID-19, there is a dire need to recognise which approaches and proposals work.

The VUCA framework, which is commonly applied in business and military settings (Bennett and Lemoine, 2014), well encapsulates the challenges individuals and governments face in these volatile and uncertain times. The framework also outlines the approach one should take, with due consideration of the amount of information available and the certainty of the situation. We adapted some of the key elements of the VUCA framework and correspondingly, we see in Fig. 1, that the complexity and uncertainty inherent in the COVID-19 pandemic mandates that governments must face "unknown unknowns". This also means enlisting the expertise of relevant specialists and building up resources to address the complexity; and being transparent with in-

formation to alleviate the ongoing uncertainty of the situation.

An important lesson we have learned from this evolving pandemic is that the lack of transparency creates further confusion and undermines public trust (Alwan et al., 2020; Tandon, 2020), and the bureaucratic process should aid and not hinder crisis management. Early reports of a 'SARS-like' illness were ignored by the Chinese government (Enos, 2020), which led to widespread outrage at the injustice and inaction.

In many ways, China later bought the world some lead time to act after enacting a *cordon sanitaire* of Wuhan and the surrounding cities in Hubei Province (Hartley and Perencevich, 2020). Many have hailed Germany's Chancellor, Angela Merkel and New Zealand's Prime Minister, Jacinda Ardern as model examples for honest communication and decisiveness in handling the COVID-19 pandemic (Stafford, 2020; Cousins, 2020). On the other hand, much of the United Kingdom's early response and wildly divergent narrative by the United States President, Donald Trump, were met by public confusion and dissent (Lee and Morling, 2020; Haffajee and Mello, 2020). Even though there could be other confounding variables at play, Germany and New Zealand have, so far, prevented overcrowding of their health services and the incidence and fatality rates of COVID-19 are significantly lower than their neighbouring countries.

Apart from the importance of swift action and pandemic preparedness, there are many lessons we must learn from the COVID-19 pandemic. COVID-19 is not the first and it would also not be the last pandemic mankind would have to wrestle with, given the vast interconnectedness and globality today. Governments must be agile and responsive to change. Failure is not the ultimate catastrophe, but the failure to learn from our failings is.

Contributions

Qin Xiang Ng conceived the original idea for the study. All authors contributed to the data analysis and interpretation. All authors discussed the results, contributed to the writing of the paper and approved the final manuscript.

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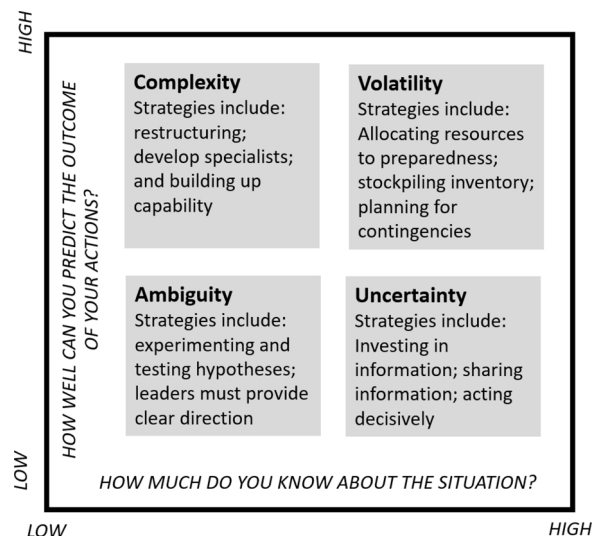


Fig. 1. An outline of the VUCA framework.

Declaration of Competing Interest

No conflict of interests to declare.

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