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FROM THE INSIDE

A pandemic of cognitive bias

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The Sars-CoV-2 pandemic is an unprecedented challenge to today's clinicians: the urgent need to act, the lack of time to collect robust evidence and the collective fear of failure have created ideal conditions for cognitive biases to flourish.

A cognitive bias is a systematic pattern of deviation from an established norm or rationality in judgment [1]. Individuals create their own "subjective reality" from their perception of the input. As a result, individuals' construction of reality may guide their behavior in the world.

Although some cognitive biases can be adaptive since they may lead to more effective actions in a given context, especially when timeliness is more valuable than accuracy, they may also lead to perceptual distortion, inaccurate judgment and illogical decisions as they result from our limited capacity for information processing.

The current pandemic has given us many examples of cognitive biases. Hoarding food and toilet paper despite official assurances of sufficient and stable supply are examples of impaired decision-making: stressed people often believe that taking action, any action, no matter the kind, tends to resolve problems, a phenomenon known as action bias. Such a bias will naturally be amplified in a social context because of the human tendency to follow blindly the actions of the others (the "bandwagon effect") out of fear of missing out on something [2]. Unfortunately, queuing in front of a supermarket can only create dangerous vicious circles by spreading infection and panic. The same happened with the use of hydroxychloroquine leading to misleading and harmful consequences [3].

Cognitive biases have been responsible for flawed narratives around key parts of our health system. For example, the notion that coronavirus disease 2019 (COVID-19) mortality rates are strictly dependent on the availability of ventilators has enabled a focus on one objective element of the system. However, this has come at the expense of forgetting that the patients on mechanical ventilation need a comprehensive healthcare support system, with a range of other equipment as well as suitably trained manpower and ventilators are a minimal part in the system. This is an example of what is called substitution bias, where, faced with a complex and difficult question (how to make sure the healthcare system is capable of delivering that support), an easier one (how to increase the supply of ventilators) is substituted.

While intensivists may find it ridiculous to focus only on available ventilators, they have not been immune from cognitive bias. Notably, we lacked suitable definitions of what we were facing and have merely used the labels we had, an example of representativeness bias. As result, we named diffuse COVID-19 pneumonia as acute respiratory distress syndrome (ARDS) and accordingly we used ARDS ventilation protocols [4]. Similarly, once we labelled the problem as a "viral infection" we started using antiviral drugs developed for Ebola and HIV despite the absence of evidence to support their use in this context [5, 6].

Scientific research, whose role should be to guide our decisions, has not helped.

The need to share information as quickly as possible has legitimized poor quality literature: EBM has stopped being *Evidence-Based Medicine* and has given way to *Emergency-Based Medicine*, with clinicians making decisions on the basis of hypotheses, anecdotes, case reports and ambiguous data.

Without evidence to guide us, and therefore the ability to offer the right quality of care to patients, we have reacted to the pandemic by offering a "fruit salad" of different drugs whose efficacy is far to be recognized.

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Psychosocial norms teach us that inconsistency is not a desirable trait and consequently people try hard to maintain their intellectual commitments and beliefs even against evidence (known as commitment bias) [7]. It can, therefore, be difficult to admit one's own irrational and faltering reactions to an emergency. However, it is only by accepting our limitations and understanding our cognitive biases that we can turn the current chaos into an opportunity.

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