Behaviourally informed health communication strategies can help improve Covid compliance

Treating Underestimation

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Legend has it that the king wanted to reward Sissa ibn Dahir for having invented chaturanga, the precursor of modern-day chess. Ibn Dahir requested only a grain of wheat on the first square of the board, two grains on the second, four on the third, eight on the fourth, and so on. The king, amused at the strange request, granted his wish, without quite realising that the number of grains on the last square of the board would be worth more than his kingdom. He was suffering from what today's behavioural science terms exponential growth bias (EGB).

EGB is the psychological phenomenon due to which people tend to linearise the growth path of a process that grows exponentially. It is particularly relevant for the spread of Covid-19. This phenomenon has some important ramifications as India enters the second wave of the pandemic.

Geometric Growth

The spread of the disease, as apparent from recent data, follows a geometric progression. This phenomenon is captured by what epidemiologists term as the basic reproduction number — R-number — or the number of cases directly infected by one case. An R-number greater than 1 implies that an infected individual risks infecting more than one individual, each of whom risks infecting more than one. This leads to the disease's geometric progression, and the number of cases on a given day increases at an increasing rate.

However, in an environment where the R-number exceeds 1, ask a person what the number of Covid-19 positive cases will be in a month. She is almost surely likely to underestimate the number.

A January 2021 study (bit.ly/39Tb RKS), published in Social Science and Medicine, shows that when people are shown actual data from three consecutive weeks on the number of Covid-19 cases to predict the number of cases in the fourth and fifth week, they end up severely under-predicting the numbers. The difference between the actual and predicted number of cases is EGB.

The implications of EGB on Covid-appropriate behaviour are non-trivial. Think of a person who has a high EGB. She thinks that the number of cases in the future will be much lower than the actual number. Consequently, her perception of how risky it is to contract the disease is much lower than what it would have been if she did not have a high EGB.

The study shows such a person is less likely to comply with Covid-appropriate behaviour such as using sanitiser, mask-wearing, etc. Further, they are more likely to find others' non-compliance as appropriate, thus weakening the effect of informal social sanctions on compliance behaviour. Besides, they are also likely to say that GoI is doing an excellent job addressing Covid-related concerns. It is easy to see how the inability to foresee the exponentiality of growth of Covid-19 cases can quickly lead to a multi-fold increase in the number of cases.

A second wave? What second wave?

Exponentiality of growth abundantly appears in everyday life too. For instance, milk boils at an exponential rate — which is why it spills so often. Water hyacinth manages to fill a pond ever so quickly. EGB has been documented in each of these cases, but in the context of Covid-19, it has enormous public health consequences.

Getting the Numbers Right

In a September 2020 discussion paper (bit.ly/3wGnxdN) for the IZA (Institute of Labour Economics), two ways to mitigate the bias were looked at. First, participants were asked to predict the number of cases in the future. However, they were given active feedback on the error they were committing in the prediction task in some conditions. It turned out that participants learned from the mistake they were committing and, within a few iterations, could predict the future number of cases with considerable accuracy.

Second, some participants were given a forecast range based on a mathematical model, and were told that there is a significant chance that the actual number of cases would lie in that range. This behavioural nudge led to a sharp increase in the predictions' accuracy, and an increase in the stated compliance rate of Covid-appropriate behaviour.

These findings have an important implication for public health communication. The second wave of Covid-19, very much like the first, has seen a rapid rise in the number of cases. At the time of writing this piece, the number of new cases was 126,789, the highest single-day increase in over five months. It is unlikely that the rate of growth will come down soon.

At the same time, caution fatigue seems to have set in among people. What should the government do to make sure that people do not 'under-predict' the number of cases, perceive the risk of infection correctly, and observe Covid-appropriate behaviour? For one, GoI should consult the country's leading epidemiologists and public health experts and routinely publish forecasts of the number of Covid-19 cases for subsequent weeks. Such forecasts should be widely publicised in the media.

This will help make the exponentiality of the growth of the disease top of the mind for people. This, in turn, will help recalibrate the risk perception, and encourage the adoption of Covid-appropriate measures. After all, we don't want the people to make the same mistake that pauperised Sissa ibn Dahir's king.

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