COMMENTARY

(Non)adhering to measures to control COVID 19: Insights from Behavioral Economics

Rivu Basu[1], Achin Chakraborty[2]
[1]Associate Professor, Department of Community Medicine, Bankura Sammilani Medical College; [2]Professor, Director, Institute of Development Studies, Kolkata

SUMMARY

It is now apparent that as a measure to contain Covid-19 pandemic the scope for strict lockdown is rather limited because of its serious negative impact on the lives and livelihood of people. Therefore measures such as wearing masks, washing hands and avoiding crowded places turn out to be the most important ways of preventing spread of the virus. However, adoption of and adherence to these practices depends largely on voluntary compliance as it is difficult to strictly monitor people's behavior. In this paper the authors argue that for better results we need to first understand the reasons for non-adherence, and in an attempt to understand, the emerging field of behavioral economics can be of help. Different elements of behavioral economics, such as, the prospect theory with its cognitive biases like heuristics, anchoring, salience, and above all, social norms are capable of explaining many of the behaviors that have relevance to management of the pandemic. The moral philosophic position that underlies behavioral economics can be located somewhere between libertarianism and paternalism. While libertarianism tends to prioritize an individual's freedom to choose, paternalism takes the view that the individual may not always know what is good for her/him. 'Libertarian paternalism', on the other hand, would allow public institutions to influence one's behavior while respecting freedom of choice. In the absence of hard data, popular media reports and anecdotal evidence have been used in this essentially interpretative exercise.

KEYWORDS

Covid Control, Behavioral Economics, Cognitive Biases

SECTION I: MOTIVATION

A cluster of pneumonia of unknown etiology was reported in Wuhan City, Hubei Province of China on 31 December 2019(1). On 7 January, the Chinese authority identified a new type of coronavirus as a cause of pneumonia outbreak, which is different from any other human coronaviruses discovered so far. The new strain was named as 2019-nCoV. Afterwards on 11 February 2020, this virus was named as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and the disease is named as COVID-19 by World Health Organization (WHO). Being a zoonosis that spreads from animals to human beings this kind of infection is not new to human beings. There has been documented evidence of this kind of infection in the name of MERS and SARS. However, this virus had higher infectivity rate but lesser killing power, which means it was not to be stopped and be allowed to propagate in the human population (2). Transmission occurred mostly through droplets, personal contact, and contaminated objects. COVID-19 outbreak was declared as pandemic by WHO on 11 March 2020. According to WHO it is a controllable pandemic and urged all countries to take a comprehensive approach considering their circumstances and with containment measures as the central pillar. These measures included preventive measures like wearing masks, restricting outside activities to bare essential, avoiding crowded places, frequent washing of hands with soap and water or sanitizer. Most countries had to take the extreme step of lockdown of all activities to get the countries prepared for a major upsurge of the disease which may exert enormous pressure on the health care delivery system. Some countries

CORRESPONDING AUTHOR: Dr Rivu Basu, Associate Professor, Department of Community Medicine, Bankura Sammilani Medical College, Kenduadihi, Bankura, West Bengal, Pin: 7221002
E Mail ID: rivubasu83@gmail.com
ARTICLE CYCLE: Received: 22/11/2021; Revised: 05/12/2021; Accepted: 16/12/2021; Published:31/12/2021
CITATION: Basu R, Chakraborty A. (Non)adhering to measures to control COVID 19: Insights from Behavioral Economics. J Comp Health. 2021;9(2):106-111. Doi: https://doi.org/10.53553/JCH.v09i02.012

assumed that lockdown would actually prevent the spread of the disease(3). However these steps led to tremendous injury to the economy and the social fabric (4). Even the very basic measures like wearing masks properly and washing hands, avoiding crowded places were not followed in most of the countries. A study conducted in Japan finds that only 23.1 % of the population were wearing masks properly (5). Despite the evidence that these measures actually decrease mortality (6), people continued to ignore these basic practices that can restrict the spread of the disease. The authors were unable to find academic articles on mask compliances in India but a newspaper report stated that though 90 percent Indians are aware of the importance of wearing a mask, only 44 percent wear it(7). Restrictions on gathering in crowded places were gradually relaxed from unlock phase 1 and people started flocking in places during the festive seasons in many parts of the country with frequent violation of social distancing norms (8,9). It seems rather difficult, if not impossible, to maintain social distancing norms in India especially in urban areas. The unrestricted movement of people in recreational facilities and engagement in non-essential activities may have made the situation worse in India (10). Thus, to understand and explain this apparently irrational behavior, it would be worthwhile to draw on the literature on health related behavior.

SECTION II: THE CONCEPTUAL FRAMEWORK AND METHODOLOGY

Through publicly agreed laws that correspond to a common set of restrictions, the 'people as a sovereign body' make a balance between freedom without obligation to others and protecting against violations of individual liberty by any despotic power (11). We argue in this paper that the idea of a free society with a focus on individual rights, apparently influenced by the libertarians(12) can actually cause a worse societal outcome in a situation like a pandemic. On the other hand, authoritarian measures bypassing the need for building democratic consensus compromise on the basic tenets of democracy. As a matter of fact, plenty of evidence suggests that democratic institutions lead to better health outcomes(13). Therefore the contestation between these two contrasting moral philosophic perspectives will continue in the case of such public health emergencies in future(14). The questions of relevance are the nature and limits of and state surveillance, which necessitate a political framework to look at our questions. We start with utilitarianism and observe that the initial response of the Indian government to the outbreak of the Coronavirus reflected classical utilitarianism, namely, maximizing the collective interest. But to do maximum good to the maximum number of people, often the means are blurred and controversial questions like whether to allow people to mix to promote herd immunity imposing the penalty in the form of a large number of deaths that would arise. In contrast, following Rawls, whose idea falls in the Kantian tradition, one can argue that utilitarianism, by emphasizing on the aggregate, goes contrary to the idea that each human life is important. However, these ideas are at the normative philosophical level, ignoring the choices people make in reality and their consequences, what is often called 'positive-analytic' in economics as opposed to 'normative'. The focus on the 'demand' comes from this positive approach. In other words, normative policy prescriptions often ignore the demand side and how demand is influenced by individual choices and preferences. As libertarians focus on an individual's self-interest, it is often assumed that they have very little to say on the communitarian solutions to societal problems. However, libertarian philosophy can guard us against blatant violations of individual rights in the name of collective good and draws our attention to the limits of state power. Delanty mentions many instances where liberty had to be curbed by invoking the general emergency rule of law like in Spain where civil guards were deployed (14). This brings us to the vital question to what extent can the government leave it to the people to behave in whatever way they wish to. Studies on free will as the basis of libertarianism usually assume that human beings can decide on their own their good or bad, have proved repeatedly that mind is not "free" but a bunch of neural circuitry that obeys certain rules. Thus free will may not be free from encumbrances (15). Added to that, Perlovsky brings in Foucault's biopolitical securitization as an invasion of the modern personal space where he states that the surveillance measures deployed during the pandemic and the lockdowns or containment zones are in direct opposition with the modern

space. However, there have been better outcomes of these "infiltrations". The 1918 Flu led to the creation of national health care systems, for instance (16). The Black Death, which reduced the supply of labour, led to improved conditions for workers, at least in Europe.

A stream of recent developments in behavioral science is encapsulated in what is now known as the nudge theory (17), which somewhat balances the tension between utilitarian and libertarian positions. According to this new and influential school of thought, people do not always act rationally, in the sense that the action chosen is not in accordance with the best of her interest. What we need to understand therefore is the nature of irrationality so that the action can be fine-tuned with one's interest with a bit of nudge. Whether such methods of control (such as strict lockdown policies) would be called authoritarian can be a matter of debate, but the authoritarianism is ruled out from 'nudge' almost by definition. Nudge is such a little push that people would tend to believe that they are making their own choices without the heavy hand of the state forcing them down. Nudge theory seems to have some affinity to Foucault's later notion of discipline as governmentality, which requires libertarian rights fulfillment for its effectiveness. Interestingly, in the case of governance of the pandemic it was deemed a failure, since it did not bring about major changes to behavior within the time frame required and was abandoned in favor of more stringent and fast-acting measures that do not rely on voluntary actions (such as voluntary self-isolation, handwashing etc). We take this position to discuss the COVID related preventive behaviors in this paper and try to explore some other factors that may explain them. We try to explain the deviations of the behavior of the people regarding the virus and its control measures. We also try to find out some of the factors that can help make a more successful health education campaign to prevent the pandemic. We try to see whether the cognitive biases as mentioned in the literature on behavioral economics correspond with the apparently irrational behavior of people regarding the measures to prevent COVID 19.

Human beings are far from Homo Economicus or an economically "rational" being(18). The duality of thinking processes makes the human being prone to drift away from 'system two' thinking or conscious thinking and rely on 'system one' thinking or automatic thinking thus making mistakes that are cognitively embedded in the human brain because of evolutionary mechanisms. Cognitive biases like anchoring, framing, heuristics, are a part of human cognitive thinking. Human beliefs are systematically biased towards social norms in many ways(19). Thus, behavioral economics which deals with these biases and their impact on human behavior, plays an important role in merging the psychological aspects with the health decision making which can supported with a good number of examples in a major public health disaster like COVID 19(20).

Academic literature regarding the actual compliance to these activities is sparse, given the unprecedented situation and the emergency nature of the event, which deterred systematic collection of data. Most of the discussion here is based on popular sources like newspaper reports, blogs, and the authors also take the liberty to use anecdotal experiences. As it happens with an eclectic method of this kind, there are issues of reliability and robustness of the findings. However this exploratory exercise nonetheless is very helpful in identifying many factors pertaining especially to behavioral aspects (21). We also demonstrate that a typical argument that relies on instrumental rationality cannot adequately explain certain individual's behavior.

SECTION III: OBSERVATIONS AND DISCUSSIONS

As already mentioned, people often visit crowded places to enjoy, gathering in religious places and during festivals despite government guidelines restricting movement unless absolutely necessary. They seem to make a trade-off between immediate gratification and long-run healthy living. Not wearing masks is reportedly to avoid the immediate discomfort. Ironically, not complying with the preventive measures is not entirely due to a lack of awareness. They may be aware but they probably underestimate their likelihood to be infected. Jocelyn Belanger comes up with a practical reason (22). Fear of financial loss caused by virus containment strategies—rather than health risks—was often a stronger motivator for abiding by or ignoring government rules. In one particular analysis, they found that not a single country ranked the likelihood of

getting infected with COVID-19 above the importance of suffering economic consequences stemming from the coronavirus. On average, people around the world are more motivated by their wallets than their health. These findings suggest that a way to motivate more people to follow health guidelines is to appeal to their economic well-being. But that still does not explain the fact that people are visiting restaurants and religious festivals in numbers.

There are a group of biases that can be explained by the 'prospect theory' of Kahnemann and Tversky. The first part of the cognitive biases that needs discussing is the intertemporal choice. The choice typically follows a hyperbolic discounting pattern instead of an exponential discounting pattern, that is, immediate rewards are far more desirable than a reward delayed.

Optimism bias is people's tendency to estimate the probability of positive future outcomes as greater than average and that of negative future outcomes as less than average. This may lead people to unwittingly take extra risks with their own health and more than they would if they were aware of the objective risk of health-related behaviour. People realize the risk of getting COVID-19 from suboptimal behaviour such as not washing hands or not adhering to social distancing but are likely to believe that they are less likely than other people or their peers to get COVID-19, even if their peers adhere to preventive practices.

There is also evidence of Status quo bias where people prefer a sense of familiarity and for things to stay as they are, with inertia taking priority over action. In many of the countries COVID fatigue is visible where people are falling back to their old, status quo habits instead of making conscious choices to take the precautions.

Another group of biases have their roots in the Bayesian updating. Confirmation bias occurs when one seeks information that supports an initial conjecture and ignores or plays down evidence that would be contradictory. Lay people have adopted measures like gargling with hot water and taking many medicines in spite of no evidence in its favor. Even medical communities have held on to drugs and interventions that are of no or little use.

The next important bias that has affected the policy makers' thinking is hindsight bias, i.e. after a certain event occurs one behaves as if the event was bound to happen and takes out evidence to show that they knew it was going to happen, contrary to the contrary evidence that actually existed. For example, in the initial stages of the pandemic many countries were in denial that this would not enter that country. Only after a huge spike of cases the policy makers confided that they knew this was going to happen for a long time.

The other important feature is regression towards mean that both the common people and policy makers are falling prey to. In a pandemic on certain days the number of cases dips but surges again in the coming days. Unless a definite trend is there for a few weeks at least it is difficult to say that the pandemic is regressing. Despite that, day to day statistics is given much more importance than the overall trend by many.

Another cognitive bias affecting the behavior during the pandemic is the association bias or the causality bias. Only because two things are together doesn't mean that one causes another. This has been seen in the tendency to attribute increase or decrease in cases to things like temperature, poor sanitation, etc as causes of the disease.

Affect heuristic is a person's tendency to judge risks and benefits based on their affect, that is, different affects can produce different risk and benefit perceptions. When people feel positive about a behavior, they judge its risks as low and benefits as high; when they feel negative about a behavior, they judge its risks as high and benefits as low. This may be pervasive in people who are flouting norms and attending restaurants and other gatherings, as also not wearing masks as maybe a good mood is making them believe that the benefits of not doing so are better than the risks. This is a part of Corona fatigue that is often occurring where people have stopped taking adequate measures.

Along with all these biases there are common errors in judgment that arise from misinterpretation of statistics like base rate neglect. The lower prevalence of the disease means that there is a greater chance that the test will return a false positive. As the seroprevalence rate of Corona turns out to be low in most of the places, immunological testing will have a high false positivity. Thus, the results of seroprevalence surveys should be seen with caution. Similarly, reporting the finding of a slum of a city and extrapolating it to the entire country should be done with caution, a mistake often

known as law of small numbers where extremes of rates are often seen.

There is another genre of biases that creeps in with the Corona virus epidemic. That is by social influence, also known as groupthink, social loafing, where one starts believing in whatever the other persons in one's reference group are believing. This is even more so with the amplification of social media. Celebrities and other influencers have been vocal about their adherence to public health guideline like staying at home or wearing a mask, thereby helping to reaffirm desired behaviors for the general population, an example of social norms in COVID control(23).

There are several instances of proper or improper nudges that are thought of to change the behavior of people based on the knowledge of these biases. Framing effect refers to the fact that individuals' choices often depend on the way the choices are described, or framed, and that these choices are often affected by whether the possible outcomes are framed in terms of the gains or the losses. It offers a helpful perspective for framing health messages regarding COVID-19 prevention. It seems that health messages intended to encourage people to engage in preventive behaviors against COVID-19 (e.g., social distancing) should be framed in terms of gains, such as "If you wash your hands properly/ follow social distancing policy/adhere to the stay-at-home policy, you will increase the chances of yourself and your family having a long, healthy life."

Effective communications of social distancing practices have focused on increasing the salience of desired behaviors. This has been achieved by using clear and straightforward language, along with graphic elements that reduce the cognitive load required to process such information. Also, heuristics or rules of thumbs have been used for spreading messages. For example, messages have utilized acronyms in order to associate acommon word with desired behaviors like the campaign "Do the Five" represents the five actions recommended by the WHO.

Similarly, proper anchoring of messages has shown to be positively impacting the health behavior changes in the population. To indicate more concretely what a distance of six feet (or two meters) looks like, images have been published showing what the world would look like if people were to adhere to this public health guideline. Also there has been innovative ways of reminding people about the steps like changing the beep tone while ringing someone to an awareness message.

CONCLUSION

The Corona virus pandemic had transgressed the boundaries of medical and health sciences to social, economic and political domains. It is not surprising that the psychology of human mind, which plays a crucial role in politics and economics, would play its role in this pandemic as well. Combining psychology and economics is something that even Adam Smith tried, and then was forgotten, and has been revived lately by the behavioral economists. From the broad framework drawn on behavioral economics, discussed together with the anecdotes, it is evident that cognitive biases and their extrapolation to behavioral economics are playing a very important role in the COVID 19 pandemic. The apparent irrationality can take a systematic form, much to the liking of researchers, and people can be nudged to more appropriate behavior, if understood properly. We were unable to give hard evidence on various issues raised here and therefore had to rely on anecdotes and casual empiricism. Yet, our attempt to relate the behavioral economics framework to the variety of narratives regarding the pandemic may be useful for further explorations.

REFERENCES

1. Coronavirus disease 2019 (COVID-19) | National Health Portal Of India [Internet]. [cited 2021 Jan 12]. Available from: https://www.nhp.gov.in/disease/communicable-disease/novel-coronavirus-2019-ncov
2. Coronavirus vs. SARS: How Do They Differ? [Internet]. Healthline. 2020 [cited 2021 Jan 12]. Available from: https://www.healthline.com/health/coronavirus-vs-sars
3. Basu R. COVID Control in India: A Look Back. J Compr Health. 2020 Oct 8;8(2):129–31.
4. Kanitkar T. The COVID-19 lockdown in India: Impacts on the economy and the power sector. Glob Transit. 2020 Jan 1;2:150–6.
5. IJERPH | Free Full-Text | Incorrect Use of Face Masks during the Current COVID-19 Pandemic among the General Public in Japan [Internet]. [cited 2021 Jan 12]. Available from: https://www.mdpi.com/1660-4601/17/18/6484
6. Leffler CT, Ing EB, Lykins JD, Hogan MC, McKeown CA, Grzybowski A. Association of country-wide coronavirus mortality with demographics, testing, lockdowns, and public wearing of masks. Update August 4, 2020. medRxiv. 2020 Aug 5;2020.05.22.20109231.
7. Masks: Survey says 90% Indians aware, but only 44% wearing a mask; discomfort key reason for non-

compliance - The Economic Times [Internet]. [cited 2021 Jan 12]. Available from: https://economictimes.indiatimes.com/magazines/panache/survey-says-90-indians-aware-but-only-44-wearing-a-mask-discomfort-key-reason-for-non-compliance/articleshow/78315069.cms?from=mdr
8. Coronavirus: Is social distancing an oxymoron in India? BBC News [Internet]. 2020 Apr 23 [cited 2021 Jan 12]; Available from: https://www.bbc.com/news/world-asia-india-52393382
9. Ghosh A, Nundy S, Mallick TK. How India is dealing with COVID-19 pandemic. Sens Int. 2020;1:100021.
10. Current Rules And Guidelines - Unlock 5.0 - COVIDIndia.org [Internet]. [cited 2021 Jan 12]. Available from: https://covidindia.org/current-rules-and-regulations/
11. Queiroz R. Individual liberty and the importance of the concept of the people. Palgrave Commun. 2018 Aug 14;4(1):1–12.
12. Nozick R. Anarchy, state, and utopia. New York: Basic Books, a member of the Perseus Books Group; 2013. 372 p.
13. Does democracy lead to better health? [Internet]. Our World in Data. [cited 2021 Jan 12]. Available from: https://ourworldindata.org/democracy-health
14. Delanty G. Six political philosophies in search of a virus: Critical perspectives on the coronavirus pandemic [Internet]. LEQS – LSE "Europe in Question" Discussion Paper Series. European Institute, LSE; 2020 May [cited 2021 Jan 12]. (LEQS – LSE "Europe in Question" Discussion Paper Series). Report No.: 156. Available from: https://ideas.repec.org/p/eiq/eileqs/156.html
15. Perlovsky L. Free Will and Advances in Cognitive Science. Open J Philos. 2012;02(01):32–7.
16. Spinney L. Pale Rider: The Spanish Flu of 1918 and How it Changed the World. Vintage Digital; 2017. 323 p.
17. Thaler RH, Sunstein CR. Nudge: Improving Decisions About Health, Wealth and Happiness. Latest edition. London: Penguin UK; 2009. 320 p.
18. Kahneman D. Thinking, fast and slow. London: Penguin Books; 2012. 499 p.
19. Thaler RH. Misbehaving: the making of behavioural economics. London: Penguin Books; 2016. 415 p. (An Allan Lane book).
20. Soofi M, Najafi F, Karami-Matin B. Using Insights from Behavioral Economics to Mitigate the Spread of COVID-19. Appl Health Econ Health Policy. 2020 Jun;18(3):345–50.
21. Korstjens I, Moser A. Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. Eur J Gen Pract. 2018 Jan 1;24(1):120–4.
22. Leander JB Pontus. What Motivates COVID Rule Breakers? [Internet]. Scientific American. [cited 2021 Jan 12]. Available from: https://www.scientificamerican.com/article/what-motivates-covid-rule-breakers/
23. Banerjee A, Alsan M, Breza E, Chandrasekhar A, Chowdhury A, Duflo E, et al. Messages on COVID-19 Prevention in India Increased Symptoms Reporting and Adherence to Preventive Behaviors Among 25 Million Recipients with Similar Effects on Non-recipient Members of Their Communities [Internet]. Cambridge, MA: National Bureau of Economic Research; 2020 Jul [cited 2021 Jan 15] p. w27496. Report No.: w27496. Available from: http://www.nber.org/papers/w27496.pdf