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What concerns Indian general public on second wave of COVID-19? A report on social media opinions

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What concerns the Indian general public on the second wave of COVID-19? An analysis of 80,000 tweets

The first few weeks of 2021 has led us to grasp the hard reality that the COVID-19 crisis is far from over. In the second week of December 2020, Britain prime minister Boris Johnson has announced that a new COVID-19 strain was identified in Britain, and it is 70% more transmissible than the previous strain. This led to a series of stricter lockdowns implemented in the UK and many other parts of the world. The second day of the year 2021 records nearly a whopping 3,00,000 cases in the United States alone, the highest ever recorded COVID-19 cases for a single day [1]. It was soon reflected in other parts of the world. At the time of writing (March, 2021), India began to report nearly 40,000 new COVID-19 cases which is nearly 78% increase compared to a month earlier [2] (see Table 1).

Ever since the first case of COVID-19 was detected, social media has been a platform for the general public to share their opinions and concerns about COVID-19 crises [3]. For this study, we choose Twitter to analyze the major aspects Indian citizens discuss about

the new second wave of COVID-19. Using python library Twint, we scrapped 80,000 unique tweets posted about a second wave of COVID-19 during the first three months of the year 2021.

To understand the issues that concerned the general public regarding the new COVID-19 strain, we performed an LDA (Latent Dirichlet Allocation) topic modeling. A group of algorithms that summarizes a vast archive of texts by the process of discovering the hidden topics and themes discussed within a set of corpora on its own is Topic Modelling [4]. Blei, Ng, & Jordan, first proposed LDA in 2003. One of the positive aspects of LDA topic modeling is, it works perfectly while dealing with a large amount of data [5]. For this study, using Twitter API, we have scrapped 80,000 tweets of Indian citizens having the word 'second wave' and 'covid' in the first three months of 2021. The results of the analysis were given below.

Our analysis has shown that the possible fear of an increase in the deaths because of new COVID-19 strain, the possibility of reinstating lockdown, whether the hospitals have the capacity to tackle the surging COVID-19 cases because of the new strain, the aspect of traveling, whether the vaccines will be effective on new strains, Whether the school will continue to be shut down, issues related to personal finance, the general feeling of tiredness and the unemployment were the top issues Indian general public voiced about second wave of COVID-19.

Here we project two possible contrasting effects of social media

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Table 1
Latent Dirichlet Allocation Topics (Note: Topic label was manually labeled, and the top words are generated by the LDA model).

Topic label	Top words
Fear of increase in Deaths Possibility of reinstating Lockdown Capacity of the Hospitals Traveling Effectiveness of the Vaccine	Strain, new, even, found, increase, death, fear Still, look, right, impose, again, strain, lockdown Virus. New, case, hospital, increase, hold, shit News, part, another, November, travel, flight, shut, can't new, strain, vaccine, infect, doubt, effect, effective
School	test, help, school, mutant, kids, worry, shut,
Location	Country, London, Africa, already, Denmark, shut, strain, area
Personal Issues Feeling Tired Unemployment	Money, employ, Covid, year, business, crisis People, one, start, tired, affect, old, life, trauma Effect, affect, trauma, unemployment, shutdown, second

communication on the mental health of the public. On the positive side, such communication act as a coping mechanism which reduces mental strain, especially during the scenario where physical socialization is restricted [6]. On the negative side, it may also reinforce the mental health issues among the readers as it can be related with empathy and similar emotions [7]. Though it is challenging for the authorities to tackle the situation, social media acts as a platform to understand the public’s mental health concerns and the factors that may lead to mental health issues. A collective effort of the public, authorities, mental health workers, and policymakers to analyze such information and work for a proactive environment can add a positive mental health scenario among the public [7–9].

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References

- [1] January 3 News E. COVID-19 Live Updates: US reports highest single- day total of nearly 300K coronavirus cases. ABC7 New York. <https://abc7ny.com/health/covid-19-live-updates-us-reports-record-of-nearly-300k-coronavirus-cases/9311426/>; 2021.
- [2] March 19) Dwivedi S. Nearly 40,000 fresh COVID-19 cases in India in new high this year: 10 points. NDTV.com, <https://www.ndtv.com/india-news/coronavirus-nearly-40-000-fresh-covid-19-cases-in-india-almost-11-higher-than-yesterday-1-15-crore-total-cases-1-59-370-deaths-2394157>; 2021.
- [3] Sv P, Ittamalla R. Psychological issues covid-19 survivors face—a text analysis study. *J Loss Trauma* 2020;1–3. <https://doi.org/10.1080/15325024.2020.1864127>.
- [4] Blei M, D, Ng Y, A, Jordan M I. Latent dirichlet allocation. *Journal of Machine Learning Research*, <https://jmlr.org/papers/volume3/blei03a/blei03a.pdf>.
- [5] Praveen SV, Ittamalla R. An analysis of attitude of general public toward COVID-19 crises – sentimental analysis and a topic modeling study. *Information Discovery and Delivery*. 2021. <https://doi.org/10.1108/idd-08-2020-0097>. ahead-of-print(ahead-of-print).
- [6] Singh S, Dixit A, Joshi G. Is compulsive social media use amid COVID-19-19 pandemic addictive behavior or coping mechanism? *Asian J. Psychiatr.* 2020;54:102290. <https://doi.org/10.1016/j.ajp.2020.102290>.
- [7] Sharma MK, Anand N, Vishwakarma A, Sahu M, Thakur PC, Mondal I, Singh P, S, A, N S, Biswas A, R A, John N, Tapatrikar A, Murthy KD. Mental health issues mediate social media use in rumors: implication for media based mental health literacy. *Asian J. Psychiatr* 2020;53. <https://doi.org/10.1016/j.ajp.2020.102132>. 2018–2020.
- [8] Lathabhavan R. People and social media platforms for positive mental health- A paradigm shift: a case on COVID-19-19 impact form India. *Asian J. Psychiatr.* 2021;56:102460. <https://doi.org/10.1016/j.ajp.2020.102460>.
- [9] Praveen SV, Ittamalla R, Deepak G. Analyzing Indian general public's perspective on anxiety, stress and trauma during Covid-19 - a machine learning study of 840,000 tweets. 2021. <https://doi.org/10.1016/j.dsx.2021.03.016>. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*.