Understanding COVID-19 'infodemics': An analysis of user-generated online information about public health interventions during a SARS-CoV-2 outbreak in Vietnam, July – September 2020

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Background: Misinformation about COVID-19 has been spreading widely on the internet since the beginning of the pandemic. A better understanding of these 'online infodemics' is crucial to improve public health interventions and communication.

Methods: We conducted a longitudinal analysis of user-generated online information about five distinct public health interventions implemented in response to a large COVID-19 outbreak in Vietnam in July – August 2020: (a) cordon sanitaire; (b) national high school examination re-scheduling; (c) digital contact tracing apps implementation; (d) national tracing and prosecution of quarantine breaching; (e) national contact tracing, serology testing and quarantine. We compared the volume, dynamics, sentiment polarity, engagements, and influence scores before, during and after the outbreak using negative binominal and logistic regression, and assessed the content validity of the 500 most influential posts.

Results: Most of the 54,528 included online posts were generated during the outbreak (84.42%) and online newspapers were the dominant medium (58.75%). Among the chosen 500 posts, 63.20% contained genuine information, 2.00% featured misinformation, 30.40% featured non-factual opinions, and 4.40% contained unverifiable information. All misinformation posts were made during the outbreak, mostly on social media, and were of predominantly negative sentiment. Higher numbers of engagement were observed for unverifiable information (IRR 2.83, 95% CI 1.33-0.62), information posted during the outbreak (IRR 0.15, 95%CI 0.07-0.35 and 0.46, 95%CI 0.34-0.63 compared before and after the outbreak, respectively), and information with negative sentiment (IRR 1.84, 95%CI 1.23-2.75). Negatively-toned posts were more likely to be misinformation (OR 9.59, 95%CI 1.20-76.70) or unverified information (OR 5.03, 95%CI 1.66-15.24).

Conclusion: The overall volume of misinformation and unverified information was low and clustered in the outbreak phase, with social media platforms being particularly affected. This first in-depth assessment of user-generated online information demonstrates the value of analyzing 'online infodemics' to understand public perception of health interventions during COVID-19.

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