

Sensational media reporting is common when describing COVID-19 therapies, detection methods, and vaccines

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Word choice is important when describing medical therapies, especially during COVID-19 outbreaks. The public relies on news media for health information and medical misinformation is often spread through news stories.¹ Medical misinformation can affect health outcomes and polarize the public's distrust in medical science.² During a pandemic, the public's trust in science and medical professionals is crucial. Thus, one would question the ethical responsibility of journalists, public officials, and others when using exaggerated language like *game changers* in describing COVID-19 therapies when only preliminary data are available.³ We evaluated the use of 11 prespecified terms used in news stories for exaggeration. We evaluated whether each new outlet was Health on the Net Foundation Code of Conduct (HONcode) certified—the oldest and most reliable indicator of credible, trustworthy, online health information.⁴

We adapted our methodology and superlative (defined as 'an exaggerated or hyperbolic expression of praise')⁵ terms from a previous study.⁶ Google News was searched from December 1, 2019 to March 24, 2020 for 11 prespecified terms with 'coronavirus' and 'COVID-19'. Articles were screened and data were extracted by investigators (RO, TR,

SN, MP) in duplicate, blinded fashion. Articles were excluded if they: (1) did not cover COVID-19, or (2) did not use a superlative to describe a therapy, vaccine, or detection method in an exaggerated manner. A pilot-tested Google form was used to extract data from each article which included the following items: article URL, publishing entity, superlative term(s) and frequency used, author's background, whether the article described a therapy, detection method, or vaccine, and if it included clinical data. When articles describe a therapy, but fail to mention the treatment or treatment class, then 'not mentioned' was selected as the articles category. We determined Health on the Net's Code of Conduct (HONcode) status by searching each website for the HON seal and cross-checked each website with their database.⁴

We screened 5636 news articles, of which 502 were focused on COVID-19 therapies. Of these 502 articles, 255 contained superlatives used in an exaggerated manner (255/502, 50.8%). We identified 616 superlative instances describing different therapies, vaccines, and detection methods. Only 16 articles provided clinical data (16/255, 6.3%) (table 1). Zero websites were HONcode certified (0/255, 0.0%).

The use of superlatives to sensationalize potential benefits of therapies, vaccines, and

Table 1 The frequency of news articles, superlative instances, and other general characteristics of news articles focused on the top 6 most popular COVID-19 topics

Category	Number (%) of news articles (n=255)	Number (%) of superlatives describing category (n=616)	Number of occurrences for each superlative	Number of news articles providing clinical data
Antimalarial drugs	45 (17.6)	111 (18.0)	Cure (64), game changing (17), breakthrough (11), life-saving (10), miracle (8), groundbreaking (1)	9
Antiviral drugs	39 (15.3)	113 (18.3)	Cure (50), breakthrough (28), game changing (6), groundbreaking (3), miracle (1)	3
Vaccines	64 (25.1)	113 (18.3)	Breakthrough (73), cure (16), life-saving (10), revolutionary (4), groundbreaking (4), transformative (4), game changing (2)	—
Detection methods	72 (28.2)	146 (23.7)	Game changing (68), breakthrough (52), revolutionary (10), transformative (8), miracle (4), groundbreaking (2), life-saving (1), life-changing (1)	3
Not mentioned*	13 (5.1)	42 (6.8)	Breakthrough (25), cure (11), life-saving (2), life-changing (2), game changing (1), groundbreaking (1)	—
Combination†	8 (3.1)	25 (4.1)	Cure (12), breakthrough (6), game changing (2), life-changing (2), miracle (2), transformative (1)	2

Eleven prespecified superlative terms: 'breakthrough', 'cure', 'game changer', 'groundbreaking', 'home run', 'life-changing', 'life-saving', 'marvel', 'miracle', 'revolutionary', and 'transformative'.

*Specific therapy was not mentioned by name within the news article.

†Combination of hydroxychloroquine and azithromycin.



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detection methods for COVID-19 was common in news articles that lacked data to support their claims. No websites were HONcode certified.⁴

Health-related misinformation is a challenge that has adversely affected public health.⁷ Publications suggest that healthcare professionals and journals have a larger online presence to combat false, inaccurate, or incomplete health information. Thus, to lessen the promotion of unfounded 'cures', 'miracles', and 'life-saving' treatments, vaccines, and detection methods surrounding COVID-19, we urge healthcare professionals to use the internet as a tool to combat these sensationalistic terms. We recommend that physicians join the Association for Healthcare Social Media—a non-profit organization that promotes healthcare professionals to establish an online presence in combating health-related misinformation.⁸

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