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Inoculating before the next infodemic: Lessons learned from Covid fact-checkers

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Inoculating before the Next Infodemic:

Lessons Learned from COVID Fact-Checkers

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Abstract

This in-progress, quantitative content analysis examined 236 fact-check articles that evaluated false prevention and treatment advice shared online during the Covid infodemic. After downloading all relevant articles from 7 fact-check sites between 3/13/20 and 2/25/22, 24 student coders completed a code sheet for each article. Facebook was flagged for a disproportionately high number of misinformation posts, as compared with three other social media platforms. The fewest appeared on Instagram. Authoritative source types – including doctors, scientists, CDC, and WHO – were frequently cited in flagged posts. Misinformation posts attributed false information to credible sources, to improve credibility and virality. Others appealed to partisan beliefs by citing Trump, other politicians, and TV/radio personalities almost five times as frequently as the top official Covid source Anthony Fauci. Viral posts often promoted inexpensive and readily available remedies such as water, bleach, lemon juice, salt, baking soda, orange peels, etc. Although these posts provided bad advice, none were attempting to profit by selling bogus cures.

Research Questions

RQ1: Which social media platforms were flagged the most often for sharing misinformation about Covid prevention and treatment?

RQ2: What sources were attributed in flagged posts?

RQ3: What Covid remedies and treatments were recommended in flagged posts?



Facebook posts

stated on March 22, 2020 in a Facebook post:

“Boil some orange peels wit cayenne pepper in it stand over the pot breathe in the steam so all that mucus can release from yo nasal... MUCUS is the problem its where THE VIRUS LIVES!!!”



The COVID-19 “Infodemic”

- The truth can be difficult to determine, especially in a rapidly evolving situation such as a pandemic.
- The infodemic exploited existing weaknesses in public understanding of science, policy, public health, and media – exacerbated by partisan politics, commercial interests, rumors, and selective news reporting.
- “Infodemiology” is an emerging scientific field that examines determinants and distribution of health misinformation during a pandemic.
- COVID social media content ranges from raw, tentative, and problematic misinformation (fake news and rumors) – to highly refined and trustworthy information.
- Fact-checking (infoveillance) involves filtering, analyzing, correcting, and transforming public knowledge. Corrective messages, especially coherent and credible rebuttals, can influence whether people believe misinformation.
- Unfiltered COVID misinformation has led to the sidelining and suppression of science in favor of political and commercial interests – as well as public confusion, societal disruptions, and deadly health consequences.

Methods

- Quantitative content analysis was used to analyze all fact-check articles that had evaluated the truth of online posts about Covid treatment or prevention.
- 24 student coders completed a code sheet for each fact check.
- This study is in progress, through completion of 2022 data collection.
- So far, 236 fact-check articles have been analyzed from seven fact-check websites: Politifact, Snopes, FactCheck, LeadStories, AFP, Health Feedback, and SciCheck.
- **Time period:** Relevant fact-check articles were pulled from March 13, 2020 (the day Covid was declared a national emergency) through Feb. 25, 2022 (last day that CDC recommended masking).

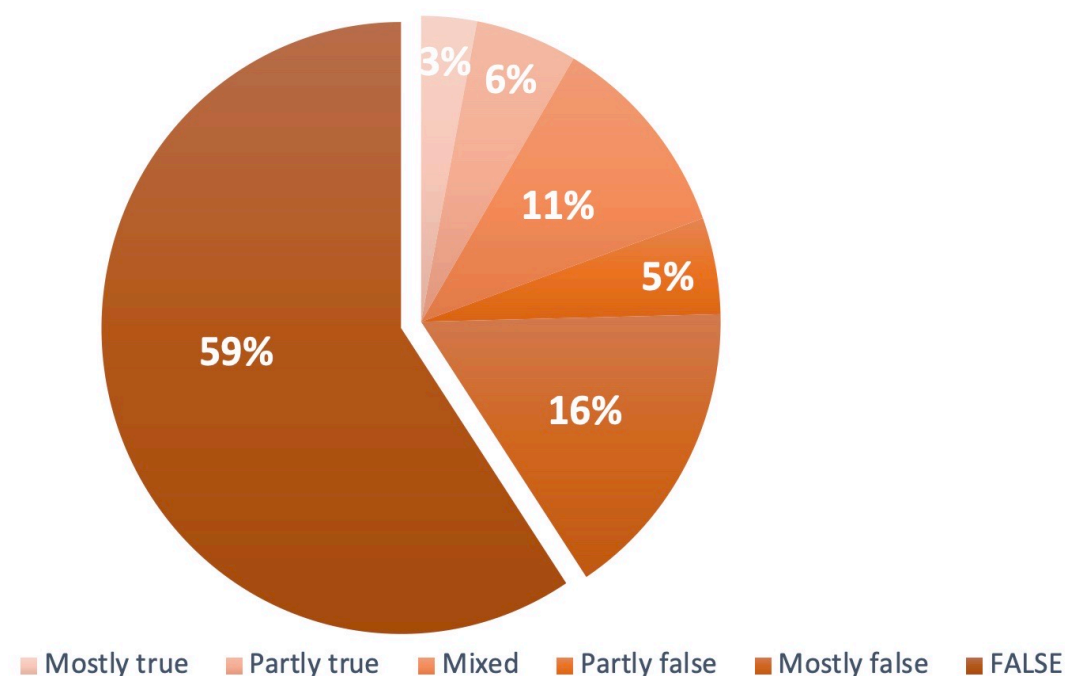
Selected Frequencies

- Fact-checked posts rated 5.06 on a 6-point scale (1=Mostly True through 6=False)
- 53.6% of posts were publicly flagged/hidden.
- 76.3% of flagged posts appeared on social media, while the rest were blog posts, news stories, White House speeches, TV segments, press conferences, medical studies, opinion pieces, etc.
- 58.8% of posts included an image or video
- 58.3% of all posts were classified as clickbait
- 51.9% contained Covid advice, and 28.8% of all posts recommended a remedy
- 70.5% of all posts did not mention risk

Flagged posts

Platform	% of flagged posts	Metrics	Max number
Facebook	53.70%	Likes	23,000
		Shares	46,000
Twitter	12.30%	Likes	400,000
		Retweets	103,500
Instagram	7.70%	Likes	73,544
YouTube	7.60%	Likes	26,000
		Views	1.4 million

Fact-check ratings of Covid treatment and prevention posts (2020-2022)



Misinformation Virality

Across all 236 fact-check articles that evaluated a COVID treatment or prevention post that had received over 1,000 likes:

- 71% of Facebook posts were rated Mostly False or False (vs. only 7% rated Mostly or Partly True)
- 56% of tweets were rated Mostly False or False (vs. none rated Mostly or Partly True)
- 100% of Instagram images were rated Mostly False or False
- 100% of YouTube videos were rated Mostly False or False

Also:

- 56% of tweets that were retweeted 1,000 or more times were rated Mostly False or False (none rated Mostly or Partly True)
- 100% of YouTube videos viewed over 1,000 times were rated Mostly False or False

Conclusions

RQ1: Social media platforms

- Facebook shared a disproportionately high number of flagged posts, compared with the other three social media platforms.
- The fewest appeared on Instagram.

RQ2: “Info” sources

- Authoritative source types –doctors, scientists, CDC, WHO, etc. – frequently were cited in flagged posts.
- Many posts were attributing false info to credible sources, to improve their credibility and virality.

RQ3: Bogus remedies

- Viral misinformation posts often promoted inexpensive and readily available remedies such as water, bleach, lemon juice, salt, baking soda, orange peels, etc.
- Some posts also tried to appeal to partisan beliefs by citing Trump, other politicians, and TV/radio personalities almost five times as frequently as the top official Covid source Anthony Fauci.
- Although the posts provided bad advice, they were not trying to profit by selling bogus cures.

Top problems	% of all fact-check articles	Facebook (115 posts)	Twitter (29 tweets)	Instagram (18 images)	YouTube (18 videos)
	<i>Misinformation</i> (inaccurate)				
Inaccurate claims	33.5%	27.1%	7.6%	2.5%	4.7%
Unproven claims	28.0%	16.1%	5.9%	2.1%	3.0%
Unsupported claims	22.5%	13.1%	2.5%	1.7%	0.1%
Misleading info	22.0%	16.1%	3.4%	0.0%	3.0%
Not a cure	13.6%	6.8%	3.0%	1.3%	3.0%
Changing advice	7.2%	1.3%	1.7%	0.0%	1.3%
Misattributed claim	6.4%	3.4%	0.0%	0.0%	0.1%
<i>Disinformation</i> (deceptive)					
Fake news	30.1%	21.2%	5.9%	3.0%	2.1%
Bad advice	30.5%	15.7%	3.8%	2.5%	5.5%
Conspiracy	20.3%	11.9%	1.7%	1.7%	1.3%
Disinformation	17.8%	8.1%	3.0%	3.4%	3.0%
Political propaganda	7.6%	7.2%	2.1%	1.3%	0.0%

Top information sources mentioned in flagged posts

Source type	% of posts	Source type	% of posts
Doctors, health care workers	24.2%	News media outlets	6.8%
Citizens, patients, nonexperts	19.5%	Scientific studies	6.4%
Scientists	14.0%	Trump	6.4%
CDC	9.7%	Other politicians	6.4%
WHO	8.1%	Fauci	3.4%
Other federal agencies	7.6%	TV/radio personalities	3.0%

Top remedies mentioned in flagged posts

Remedy type	% of posts	Remedy type	% of posts
Water, tonic water	6.4%	Vinegar	2.5%
Hot or cold beverages	5.5%	Lysol	2.5%
Sunshine	5.1%	Traditional medicine	2.5%
Bleach	5.1%	Garlic	2.1%
Lemon juice	3.8%	High alkaline diet	1.7%
Salt, baking soda	3.4%	Bananas	1.7%
Oranges, peels	3.4%	Cayenne pepper	1.3%
Alcohol, illegal drugs	3.4%	Onions	1.3%
Vitamins	3.4%	Fish tank additive	0.1%

Can we unring the bell?

- Most AI fact-check/flagging apps are based on tweet databases because Twitter is more accessible. More user-friendly flag apps may be needed for Facebook, since that platform has been spreading the far more viral misinformation.
- Automated simple searches across social media platforms for mentions of relevant authoritative sources often used in pandemic misinformation posts might help fact-checkers evaluate more problematic posts before they go viral.
- Since problematic Covid prevention and treatment posts often recommend the use of common household items, perhaps health agencies could develop community information campaigns that help to debunk myths about certain home remedies – especially when substituting them for vaccinations has led to many preventable deaths. Campaigns also could warn people to beware of health advice provided by elected officials or TV/radio personalities in social media posts.
- Media literacy curriculum and classroom activities could help more K-12 and college students learn how to critically evaluate claims in social media posts about health advice.