

## **COVID-19, Vaccines and Related “Fake News”**

### **An Overview of Misinformation Debunked by Hong Kong Fact-checking Organisations**

#### **Background and related research**

When we make an important decision, our judgements and behaviours are influenced by the information we are exposed to. To get vaccinated or not is also the case. Negative misinformation may cause lower vaccination rates in a community (Carrieri et al, 2019). Prior research on COVID-19 vaccination suggests that pandemic-related misinformation may cause individuals to experience confusion, distress and mistrust. The stronger these feelings are, the less motivated people are to get vaccinated (Lockyer et al, 2021).

Tackling the problem of misinformation plays a vital role in easing vaccine hesitancy. Public organisations in Hong Kong issue statements to clarify rumours from time to time (see Report Series No.3). Local fact-checking organisations make every endeavour to verify information and tell the public about the news and its authenticity. Unfortunately, misinformation always spreads faster than clarifications and fact checks on social media (Vosoughi et al., 2018). The continued impact of misinformation leads to further complications. People may be influenced by the false information even if it has been debunked (Ecker et al., 2010; Lewandowsky et al., 2012). In order to tackle this problem, researchers have explored ways to prevent people from being influenced by fake news and they have introduced the theory of “psychological vaccine” (Roozenbeek & van der Linden, 2019; van Der Linden, Roozenbeek, 2020). The theory suggests that understanding the characteristics and themes of misinformation in advance can help people judge whether the information is true or not, and hence reduces the caused confusion and mistrust.

Therefore, understanding misinformation in terms of its properties and characteristics is crucial to reduce people's confusion and uncertainty about particular social issues.

## Research questions and objective

For the aforesaid purposes, this study attempts to sketch the current situation and characteristics of misinformation spreading during the COVID-19 pandemic in Hong Kong, so as to raise the public's awareness of misinformation. The study aims to answer the following questions and give suggestions on what people can do to identify misinformation.

1. What are the themes of misinformation? What are the distribution characteristics of the themes?
2. How is the misinformation presented? Which platforms are used for its dissemination?
3. What is the trend in vaccine-related misinformation?

## Data

This study searched the public fact-checking organisations based in Hong Kong and selected the following four that are currently active and regularly publish detailed fact checks:

Table 1: Data source

<b>Fact checker</b>	<b>Organisation</b>	<b>Report language</b>
AFP Fact Check, Hong Kong	AFP (Hong Kong)	English
Annie Lab	Journalism and Media Studies Centre, The University of Hong Kong	English / Chinese

HKBU FactCheck Service	School of Communication, Hong Kong Baptist University	English / Chinese
Factcheck Lab	Culture & Media Education Foundation	Chinese

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From 1 January 2020 to 14 July 2021, a total of 366 pieces of suspicious information were checked by the four organisations (358 rated as false/partially false and 8 rated as true). Through keyword searches of headlines and body texts, 120 reports were found to be related to the COVID-19 pandemic and vaccines (bilingual reports published by the same organisation on the same topic were counted as one piece). Among those 120 reports, only 4 reports were rated as true while the other 116 reports were rated as false/partially false. In other words, among the 358 pieces of misinformation, 32.4% were related to the COVID-19 pandemic and vaccines.

This study focused on the 116 articles containing misinformation about COVID-19 and its vaccines.

## Findings

**(1) The distribution and trends of themes: The themes of the articles cover the pandemic, vaccines, as well as relevant policies and political issues. Fake news about the vaccines and their side effects has begun to decrease since June 2021, which may imply that the public’s uncertainty about the risks of vaccines is reducing.**

The themes of the fake news can be divided into three categories: the COVID-19 pandemic, vaccines, and relevant policies and politics (see details in Table 2).

The first category—themes directly **related to the COVID-19 pandemic** appeared 61 times, including the development of the pandemic, transmission modes, and the prevalence of COVID-19 in countries. Fake news about the severity of the pandemic appeared most often, reflecting the

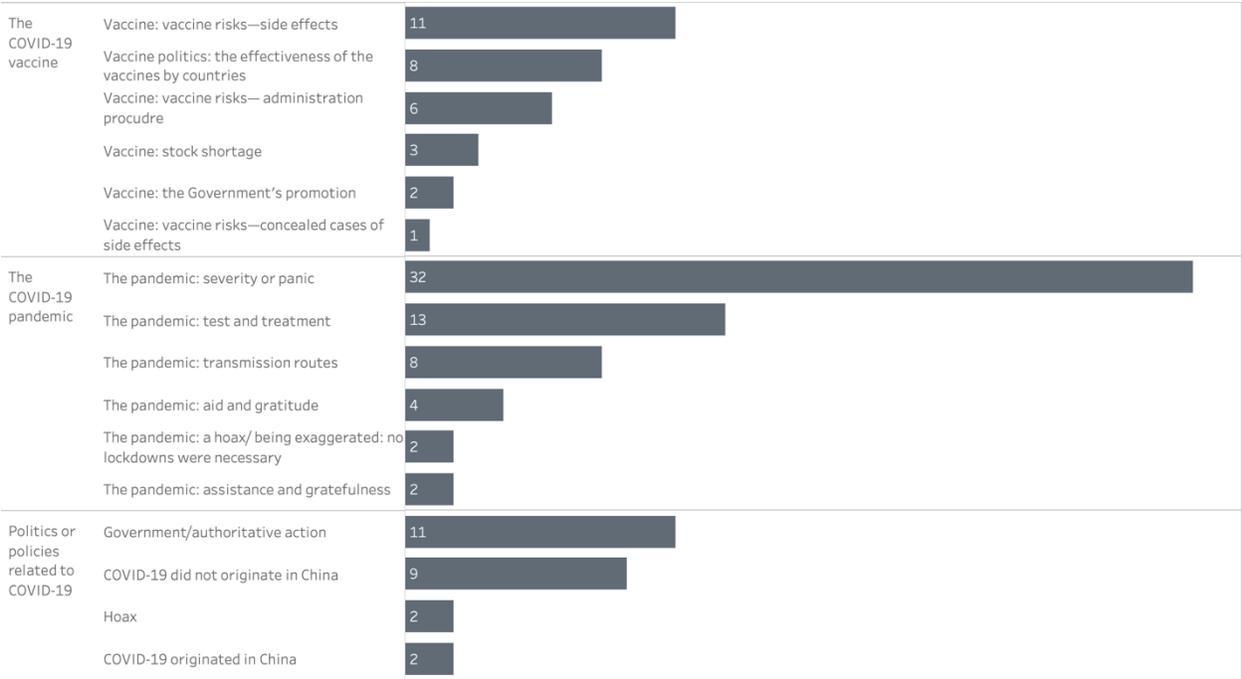
anxiety of the community. There was also an abundance of misinformation about the testing and treatments for the coronavirus, such as rinsing mouth with salt water, and drinking pu-erh tea to prevent infections.

The second category—themes directly **related to COVID-19 vaccines** appeared 31 times, including side effects, risks in the administration process, and conspiracy beliefs about the vaccines.

The third category—themes **related to politics, policies, and behaviours of authorities** appeared 24 times, including different claims about the origin of the coronavirus, social distancing policies, and the handling of personal data relating to the use of the “LeaveHomeSafe” mobile app.

In terms of quantity, vaccine-related themes account for 27% of all themes, while those directly related to vaccine risks account for 16%.

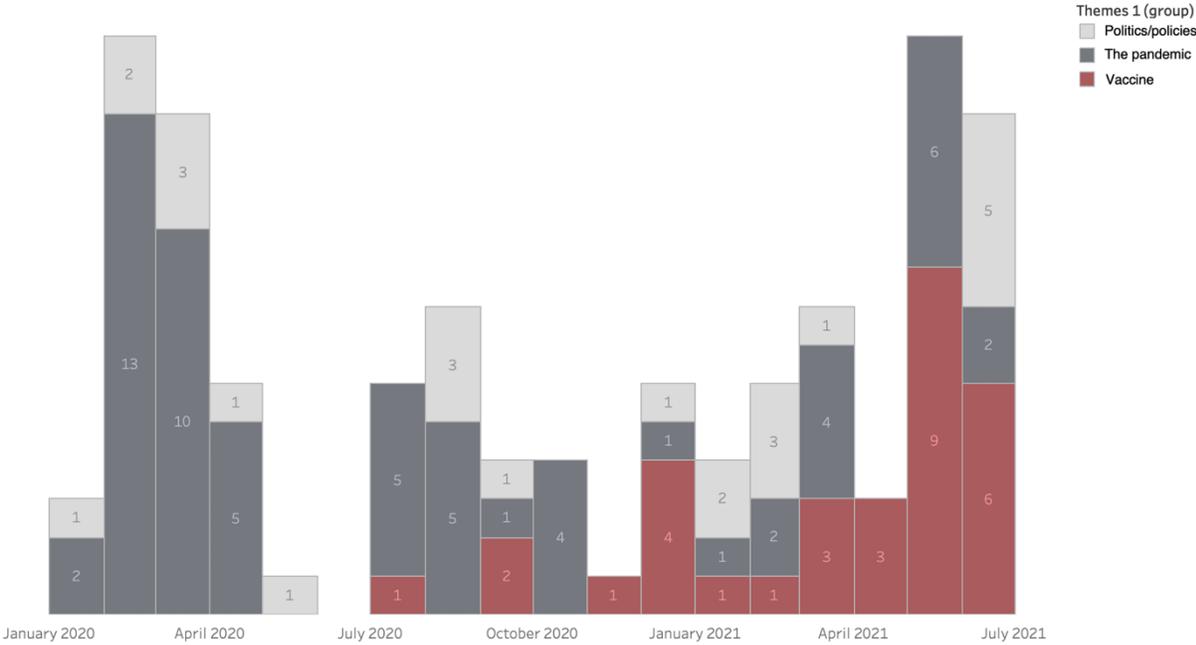
Table 2: The distribution of themes of misinformation



In terms of time frame, the dates shown in screenshots of or links to the fake news in the fact-checking reports were taken as the start of a piece of misinformation’s circulation. The misinformation related to the pandemic appeared most frequently in the first half of 2020, while those related to politics and policies appeared relatively evenly during the entire period. Vaccine-related misinformation began to spread in June 2020, peaked in May 2021 (appeared 9 times), and dropped to 4 times in June 2021. In July 2021 (as of 14 July), no misinformation was identified by the fact-checking organisations. A similar trend is also observable for the fake news related to the pandemic, but those related to politics and policies increased significantly in June.

There are two possible explanations for these changes. The first is that some misinformation spreading in May and June 2021 has not been identified by the fact-checking organisations, so the figures do not fully reflect the situation in these two months. The second reason is that citizens’ uncertainty about the vaccines and the pandemic has indeed declined since June 2021.

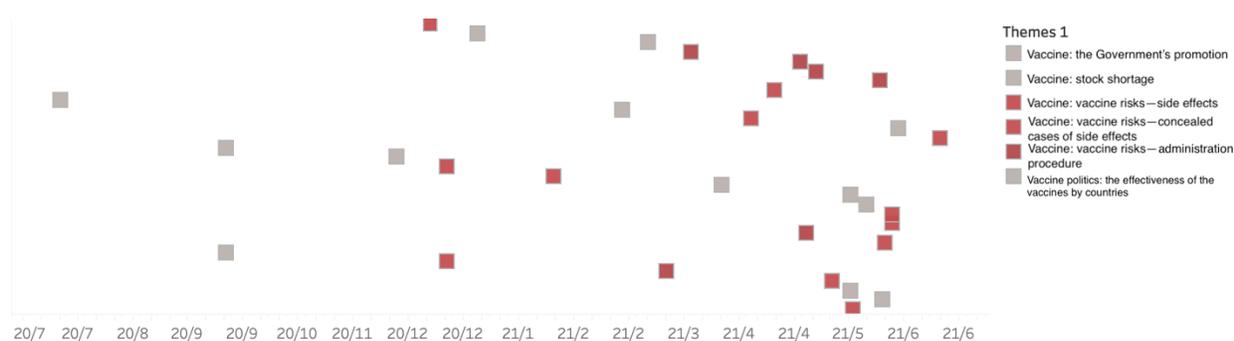
Table 3: Monthly distribution of the three categories of fake news



Some studies found that the mechanism by which fake news acts on vaccine hesitancy may be indirect. In other words, we may not believe in a certain piece of fake news, but we may develop uncertainty and a sense of distrust due to plenty of relevant fake news, thus reducing the motivation

and desire for vaccination (Lockyer et al, 2021). This study also examined the misinformation about vaccine risks (see Table 4 for details). Concerning the time distribution, vaccine misinformation began to appear since July 2020, but in the first few months, the topics focused on the effectiveness of the vaccines by countries. The misinformation about the vaccine risks started to circulate in December 2020. Since then, new misinformation continued to appear almost every month. It should be noted that a great deal of misinformation continued to spread on social media even if it had been debunked by the fact-checking organisations. Therefore, in spite of the frequency of vaccine-related fake news shown in Table 4, the number of fake news increased cumulatively in the media environment. The number of new pieces reached a peak in May 2021 and began to decline in June. The momentum for the dissemination of such misinformation seems to be diminishing, which implies that the public’s uncertainty about the vaccine may be reducing.

Table 4: Weekly distribution of themes related to vaccine risks



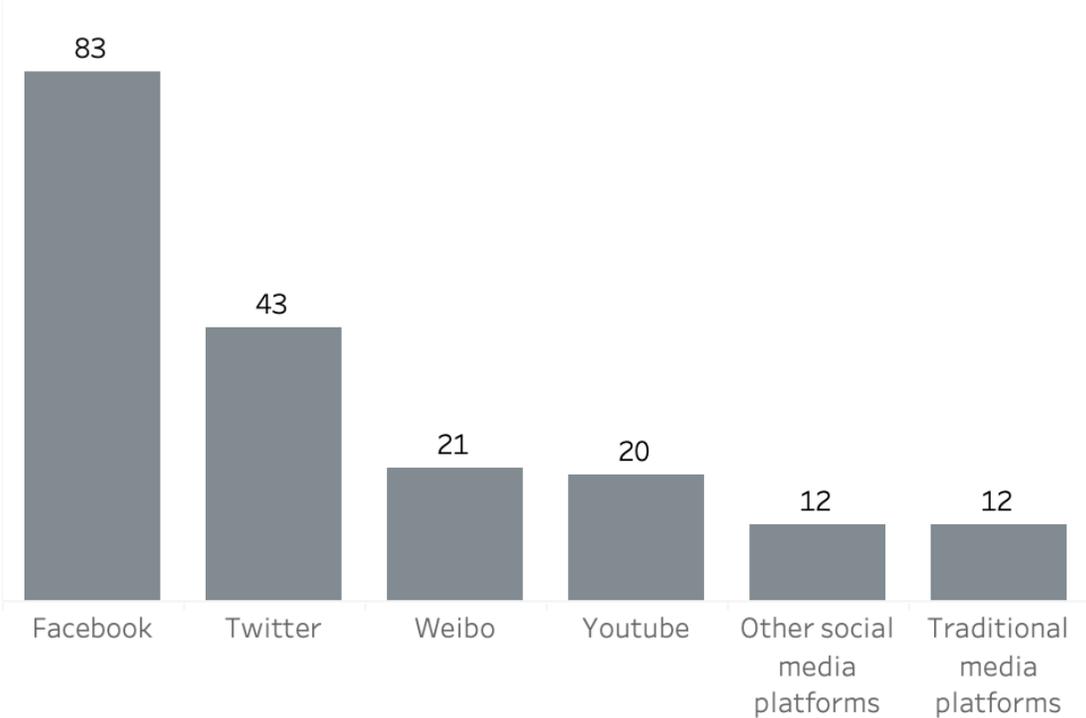
**(2) The dissemination of misinformation: Misinformation is widely spread on social media platforms across different cultures. It is often characterised with journalistic styles and camouflaged with scientific expertise.**

**a. Spreading channels: primarily on social media and occasionally on legacy media**

Among the fact checks, there are 191 references to the platforms where false information was disseminated. The major platforms are Facebook and Twitter, while information published by legacy media has been checked 12 times for reporting or citing inaccurate information. Some false information has appeared both in English- and Chinese-language forms on different platforms,

which indicates that the issues behind fake news are concerned by audiences of different cultures and are perceived with uncertainty. Due to the lack of information disclosure, some traditional media outlets cannot identify the misinformation in the first instance.

Table 5: Platforms where fake news circulates



b. Characteristics of misinformation: newsworthy, camouflaged with objectivity and authority, challenging the audience’s media and information literacy

Misinformation often has elements regarding newsworthiness, such as timeliness and prominence, and is often presented in an objective tone, which is difficult for the readers to identify. In addition, most of the misinformation is not entirely fabricated, but rather uses a collage of various information and then reconfigures and manipulates it to support a shaky idea or statement. This aligns with previous research findings (Wardle, 2019, Brennen et al., 2020). For example, many images used in misinformation are not altered, but falsely contextualised to fit into a seemingly sensible statement. There are 47 instances (41%) of such falsely contextualised information in the

fact-checking reports of our research. It manifests that “pictures always tell the truth” is no longer a criterion for fact check.

Furthermore, a large amount of misinformation appears to originate from experts (15%), governments or authoritative organisations’ press releases (11%), mainstream media outlets (9%) and scientific literature (6%), camouflaging the misinformation with authoritative sources. WHO experts, the Russian Minister of Health and the U.S. Food and Drug Administration are often wrongly cited as sources of information in fake news.

Other manipulations in some fake news stories include the alleged CT images of patients, findings of an alleged investigation, purported data of passengers crossing customs, unfamiliar jargons, etc. These tricks are used to build a false impression of being complex and scientific. If the audiences only care about the conclusion without examining the argumentation, they can be misled.

Some of the false information is easier to identify, including altered images or baseless fabrications, but only 18% of the fact-checking reports in our research involve such identifiable misinformation, less than one-fifth of the total. Therefore, it requires the readers to have adequate media and information literacy, consciously and habitually fact check information so as to identify most of the misinformation about the COVID-19 pandemic.

Table 6: Evidence used or cited in fake news

Mismatched captions 47 40.52%	Experts' speech 17 14.66%	Mainstream media 11 9.48%	No evidence 14 12.07%
	The Government 13 11.21%	Scientific literature 7 6.03%	Altered images/videos 7 6.03%

## Conclusion and discussion

This study conducted a content analysis of a total of 116 fact checks involving misinformation related to COVID-19 published by the four fact-checking organisations in Hong Kong within the period from 1 January 2020 to 14 July 2021. The themes of these reports could be generally divided into three categories: the pandemic itself, the vaccines, and relevant policies and politics. Misinformation about the pandemic was most commonly seen in the first half of 2020, while the amount of vaccine-related fake news began to increase in early 2021, reached a peak in May and fell in June. No relevant fake news was identified in July yet. The fall in the figures may be due to the fact that certain misinformation has not been detected by the fact-checking organisations and therefore it is not counted in the sample. Another possible reason is that the sense of uncertainty about vaccine risks is decreasing in local community.

Social media is the main platform where the misinformation circulates, but legacy media would occasionally report or quote inaccurate information. It is evident that misinformation is usually newsworthy and presented with journalistic features. Images, mainstream media's reports, experts and even scientific papers are often incorrectly employed to sugar-coat their fabricated contents and challenge the media literacy of the audiences.

In the environment of social media, the emergence of misinformation is inevitable. Despite the continuous efforts of debunking misinformation by the Government and fact checkers, it is after all the audience to tell what is true. Consuming information for decision-making, citizens must verify the source, actively utilise the services provided by public sectors and fact-checking organisations, and compare different channels of information, before deciding whether to believe it or not.

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