HKBU Research

The *Overcoming Vaccine Hesitancy in Hong Kong* Project by Hong Kong Baptist University Report Series No. 3

12-July-2021

COVID-19 Vaccination Misinformation and the Clarification by the Public Sectors in Hong Kong [1]

(Episode 1 of 2)

1. Background and Research Objectives

Vaccine hesitancy is described as an individuals' intention to delay or refuse vaccination despite the availability of vaccine services (Abdulmoneim et al., 2021; Butler & MacDonald, 2015). Among many communication factors influencing vaccine hesitancy, exposure to misinformation about COVID-19 could reduce the public's intention to be vaccinated (Daly, 2020; Roozenbeek et al., 2020). Debunking rumours and clarifying misinformation are thus playing an important role in overcoming vaccine hesitancy. An informed citizenry and an accountable and reliable public health system are crucial.

To achieve this goal, from the aspect of government-citizen interaction and public health communication, the public sectors—including the government officials and public health institutions—need to debunk the rumours and clarify the vaccine misinformation and rumours in a timely and transparent manner.

The present report examines the extent to which COVID-19 vaccine misinformation has been debunked and clarified by the public sectors in Hong Kong. By analysing the rumours or misinformation that have been rated as false and debunked by the public or professional sectors, as well as the clarification practices adopted by the communicators, the current inspection has three objectives:

1. **to examine the types, sources, themes of the COVID-19 vaccine rumours and misinformation in Hong Kong as identified by the public sectors;**

[1] This report is adapted from the paper, "A Mixed-Methods Analysis of COVID-19 Vaccination Misinformation and the Clarification by the Public Sectors in Hong Kong" (submitted and under review) by Xinzhi Zhang, Yuanyuan Chang, and Hiu Yan Ping.

Funding: This work is supported by the General Research Fund (GRF) by the University Grants Committee (UGC), Hong Kong SAR (Project#12602420) granted to the first author.

2. **to review the current rumour-clarification and debunking practices by the public sectors; and**
3. **to offer suggestions to improve the quality and effectiveness of vaccine misinformation clarification messages in the public sphere.**

2. Related Works and Research Questions

To achieve the objectives, the research team focuses on the content (what is the rumour about) and message features (how are the rumours disseminated) of COVID-19 vaccine misinformation and rumours as identified and debunked by the public sectors in Hong Kong.

Prior similar work has summarised the types of misinformation during the public health emergency like COVID-19. For example, Wardle (2019) and Brennen et al. (2020) classified misinformation into three different types: reconfigured (misleading content, manipulated content, and false context), fabricated, and satire. Among the 225 pieces of COVID-19 related misinformation samples, they found the majority (59%) of the misinformation was reconfigured whereas less misinformation (38%) was completely fabricated, and there were no examples of deep fakes in the sample despite a great deal of concern (Brennen et al., 2020).

Previous studies have also focused on two important practices in the debunking procedure, namely, (1) the method of appeal and (2) the use of external sources. For the appealing method, a common way of debunking is denial, which means to deny the wrong information and spell out the corrected facts. Recent studies found that merely spelling out the fact is not enough to debunk wrong beliefs (Walter & Murphy, 2018). Appeals to coherence is a better practice, which is to correct misinformation by referring to the internal contradictions of the misinformation and providing an alternative causal relationship. "A successful correction would also include a coherent explanation for how and why the false rumour started" (Walter & Murphy, 2018, p. 436).

For the use of external sources, it is crucial to provide traceable external sources when communicating to the public. For example, a prior study (Zhang & Zhu, 2021) traced and analysed 4,000 original social media posts published by 98 health journalists from several mainstream media outlets in the US during the early outbreak of COVID-19. The study found that around 65% of the posts contained deliberative contents (i.e., arguments being supported by evidence, such as identifiable citation information, URLs, or multimedia elements) and as the pandemic situation became more severe, posts containing such elements received more online attention.

Based on the above review, the project answers two questions:

1. **Report 01: What are the content and message features of COVID-19 vaccine misinformation and rumours—as identified by the public sectors (i.e., governmental institutions and public health institutions) in Hong Kong?**

2. **Report 02: What are the major methods—especially the use of causal explanation and use of external sources—in debunking vaccine misinformation and rumours by public sectors in Hong Kong?**

3. Data

3.1. Data Sources

We focused on the publicly available data sources operated by the Hong Kong government to communicate to the public:

1) The HKSAR Government Press Releases (https://www.info.gov.hk/gia/general/today.htm);
2) Government's public communication channels on social media, which include
   - *Tamar Talk*, a public Facebook page operated by the Hong Kong government (https://www.facebook.com/TamarTalk.hk/)
   - The Facebook page of the Centre for Health Protection (CHP) (https://www.facebook.com/CentreforHealthProtection/)
   - the YouTube channel of the CHP (https://www.youtube.com/channel/UC5Ot-VlC1x7xxzEnY2OK3-w)
3) The "clarifications" column of the COVID-19 Thematic Website operated by the government (https://www.coronavirus.gov.hk/eng/clarifications.html).

For the Government Press Release, we used the combinations of "vaccine" [疫苗 in Chinese] with "rumour debunking/clarification/untrue facts" [闢謠/澄清/不實信息/不實資訊 in Chinese] and all the possible combinations as the search keywords and searched related messages published from 1 January 2021 to 30 June 2021. For the social media channels, we browsed all the videos and posts published in 2021 containing the keywords "vaccines" [疫苗 in Chinese]. For the COVID-19 Thematic Website, we browsed all the messages in the "Clarification" column.

We selected the messages to be analysed based on two criteria: (1) the posts must be directly related to vaccines (debunking messages on other issues, such as the social distancing policies, were not included for the current analysis); and (2) there should be an instance of debunking or clarification of a particular rumour of misinformation (for example, expressions like "the government is watching the situation and will clarify the rumours" were not included). After removing the duplicated items and irrelevant cases, we obtained a total of 59 pieces of clarifying messages, as reported in Table 1.

Table 1.
Public communication sources and the number of clarifications (1 January 2021–30 June 2021)

Sources	**01–01 ~ 02–22**	**02–23 ~ 03–30**	**04–01 ~ 04–30**	**05–01 ~ 05–31**	**06–01 ~ 06–30**	**Total**
Government Press Release	6	5	1	2	2	16
Tamar Talk (Facebook)	1	4	0	0	0	5
Centre for Health Protection (Facebook)	4	5	0	1	0	10
Centre for Health Protection (YouTube)	7	0	6	7	8	28
Total	18	14	7	10	10	59

Note 1: 22 February 2021 was the date of implementation of the first dose of vaccination in Hong Kong.
Note 2: We identified 11 messages published on the "Clarification" section of the COVID-19 theme page, which were all included in the press release and other social media channels.
Note 3: on the Facebook channel of the CHP, two posts are re-publications of posts by *Tamar Talk*.

3.2. Measurements

For each instance of clarification, we focused on the following variables. In the current report, we ask four questions:

1. The debunkers: what are the major communication channels to disseminate clarification messages?
2. What are the themes of the vaccine misinformation and rumours?
3. Who was identified as spreading the vaccine misinformation and rumours?
4. What are the message features of the vaccine misinformation and rumours—the diffusion channels and message modality—as identified by the debunkers?

Two trained coders, both holding a journalism and communication postgraduate degree and with industry experience, manually coded all the messages and the intercoder reliability for all the variables reached 0.75 and above. The coding was performed from 30 June 2021 to 8 July 2021.

4. Findings

4.1. The Government Press Release and the YouTube channel of the Centre for Health Protection are major communication channels

Table 1 reveals that the government has been active in debunking rumours and clarifying misinformation related to the vaccine. The pace has been almost once every three days in the past six months. The government officials were more active in debunking before the first vaccination and during the early stage after the vaccination (January 2021 to March 2021) whereas the CHP became more active from April 2021 (6 videos in April, 7 videos in May, and 8 videos in June).

The Government Press Release and the YouTube channel of the CHP are very important sources of communication. The Government Press Release has published 16 cases of misinformation debunking, in the form of written responses towards the enquiries or during the Q&A session of the press conference. The YouTube channel of the CHP has published 29 videos containing clarifying messages related to the COVID-19 vaccine. Through video channels, debunking messages are released through a series of short videos (each lasts around 2 minutes). These attempt to offer more diversified information on vaccine issues than other platforms when informants with different demographic backgrounds and occupations can be featured in the video.

In the Press Release, the most active debunkers are Mr. NIP Tak-kuen, the Secretary for the Civil Service (4 times), Carrie Lam Cheng Yuet-Ngor, the Chief Executive (4 times), and the Hong Kong government (via the spokesperson, 4 times). The other debunkers include Sophia Chan Siu-chee, the Secretary for Food and Health (1 time), and Dr. Thomas Tsang, a member of the Advisory Panel on COVID-19 Vaccines (1 time).

On its YouTube videos, the CHP serves as the debunker (video narratives). Other debunkers are the informants featured in the video, and most of them are medical professionals.

Facebook is also another channel for debunking, although being less active than the Press Release and YouTube. *Tamar Talk* has published five posts on Facebook, to clarify vaccine misinformation. On its Facebook page, the CHP has published ten posts debunking the rumours about vaccination.

4.2. Most rumours involve misleading context on the risks of vaccination and false beliefs questioning the necessity of vaccination

Table 2 reports our findings on the major themes of vaccine misinformation as identified by the public sectors.

Table 2.
The Major Themes of COVID-19 Vaccination Misinformation and Rumours

Themes of rumours and misinformation	Number of messages	Examples of the discourses
1. The safety and side effects of the vaccines	22	example 1: “One day, a news story reported an unfortunate death case and he got a dose of COVID-19 vaccine a few days before (inferring a causal relationship between vaccination and the

		death)" [有一個報道說某一日有一名市民不幸過世，而他在幾日前曾接種新冠疫苗（因此懷疑疫苗造成死亡個案）] [Source] example 2: "After being vaccinated with BioNTech vaccine, the death rate exceeds the usual number?" [接種 BioNTech 新冠疫苗後，死亡率超出平日數字？] [Source] example 3: "The mRNA used in the vaccine will enter the nucleus of the human body and change genes or remain in the human body." [mRNA 會進入人體的細胞核，改變基因或殘留人體內][Source]
2. the (un)-necessity of vaccination	18	example 4: "Young people have a low risk of infection, and the side effects of the vaccine are large, and no vaccination is necessary." [年輕人感染風險低，疫苗副作用大，不需要接種] [Source] example 5: "If you wear a mask and wash your hands frequently, you don't need a vaccine."[戴口罩勤洗手，不需要打疫苗][Source] example 6: "Smokers have a lower probability to be infected." [吸煙者感染 COVID-19 機率低][Source]
3. conspiracy theory targeting the public sectors	10	example 7: "The vaccine used for me and other officers was not SinoVac; it was fake; we used another kind of vaccine." [我（Carrie Lam） 和司局長接種的疫苗並不是科興疫苗，是造假、是另一種疫苗][Source] example 8: "The government will suspend the supply of BioNTech." [政府將暫停復必泰疫苗的供應][Source]
4. the legality and policy-related issues of the	7	example 9: "there is an online media report about the FHB claiming that COVID-19 vaccines

vaccines		developed and approved for use in the Mainland cannot be used in the healthcare system of Hong Kong. ”[內地研發並獲批准使用的新冠疫苗，不能在香港醫療系統使用][Source]

The most frequently appeared rumours and misinformation related to the COVID-19 vaccine are related to the negative consequences and the risks after the vaccination. Most of the cases are making false causal connections between any deaths or injuries with the vaccination.

Another important type of rumours and misinformation—as identified by the public sectors and the debunkers—is related to all kinds of the hesitancy of vaccination. Most rumours attempted to deny the necessity to get vaccinated. Other rumours were making claims on the unsuitability of vaccination (for example, those who have chronological diseases, those who were younger, and those who are taking other medicines, were not suitable to be vaccinated).

There are other types of rumours related to the government officials and the legality and safety of the vaccines.

4.3. The message features are not always clearly spelt out by the debunkers

In terms of the message features, according to the government’s debunking, the source of the fabricated information was not indicated. For example, a common way to spell out the source is “Recently, there is a wrong information circulating online that…” [近日網上流傳不實信息…]

We also found that the majority of the spreading channel of misinformation and initiation places were not specified either.

5. Discussion and Reflection (part 1)

Based on the above analysis, the project team raises several discussions and recommendations.

First, when the overall publication frequency is high, the pace can be made more regular. For example, we found that the timeliness of the debunking cannot be estimated because most of the time these messages did not spell out the time when the rumours were published.

It is suggested that the public sectors can consider combining “urgent debunking/clarification” against some short-term rumours that have great public impacts (such as clarifying the potential causes of deaths cases) with other “long-term” misinformation clarification (such as communicating the necessity of vaccination).

Second, when the current report has identified the types and themes of the misinformation, we suggest the government debunkers classify different topics of misinformation into different columns.

For example, the CHP's video collection (a focused topic with a series of short videos) is a feasible strategy. Similar practices can be used for other social media channels as well.

Similarly, the government can also consider revising and updating the COVID-19 Thematic Webpage's Clarification column (https://www.coronavirus.gov.hk/eng/clarifications.html). When the current way of message ranking is based on chronologically descending order, we believe a theme-based ranking or an index on the top of the case can guide the users to better navigate this page and offer a better user experience. When the public sectors have produced several existing debunking messages, they can be reorganised according to the types of misinformation; or according to different mediums (like text debunking, image debunking, and videos).

In our next report, we will report out a detailed analysis of the debunking strategies used by the public sectors.

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