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Did the world overlook the media's early warning of COVID-19?

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ABSTRACT

This perspective is written to give a rapid response to discuss the role of media in risk communication in the first three months of the COVID-19 pandemic. We analyze two sets of media data, China's social media and global news event, and draw a few initial observations in relation to the impacts of China's information control policy, global risk governance, and the role of WHO.

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COVID-19 is striking the world on an unprecedented scale. Cities are locked down, schools and businesses are closed, airlines are cancelled, tens of thousand people were killed globally, and many people and their family members, especially the underprivileged class, are suffering. It remains uncertain how long the global pandemic will last and not to mention an end.

The first batch of coronavirus cases was reported in Wuhan, China in late 2019. China's local health authority first claimed the virus had "no apparent pattern of human-to-human transmission" on December 31, 2019 (Wuhan Municipal Health Commission 2019). Then, the spokesperson of China's Ministry of Foreign Affair said China had notified the World Health Organization (WHO) and the United States multiple times in early January (Ministry of Foreign Affairs and the People's Republic of China 2020). However, nothing official was done to inform or warn the public at that moment. On January 14, WHO tweeted a post citing the investigation of Chinese authorities that there was "no clear evidence of human-to-human transmission of the disease," (World Health Organization 2020) and the tweet is still accessible on the current WHO's Twitter timeline. In less than a week on 20 January, the Chinese government officially announced the coronavirus epidemic to the world (Phillips, Mallapaty, and Cyranoski 2020) and a group of leading Chinese virologists confirmed the virus can be passed between people (National Health Commission 2020). Even though confirmed cases of coronavirus had skyrocketed between late January and early March in many parts of the world, WHO finally acted on March 12 to make an announcement to declare the novel coronavirus a pandemic, indicating a global spread of virus and major public health threat.

Despite uncertainty, early warning in a crisis is known as a significant move to engage the public (Zhu et al. 2020). The world has learned the lessons in previous pandemics that transparency and proactive communication are keys to inform the public for crisis preparation. For example, WHO once discontinued its routine press conference during the 2009 H1N1 pandemic and the move is considered as a "misstep." (Fineberg 2014, 1340) Mass media has been playing a critical role in sending risk signals to the world, even though the crisis is yet to be formally

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recognized, helping the public make informed responses to take necessary precautionary measures. Despite inevitably resulting in some overreaction and spread of misinformation, in one WHO's published handbook, the organization recommends "panic avoidance should never be used as a rationale for false reassurance or for lack of transparency on the part of authorities." (World Health Organization 2005, 11) Transparency is considered as a best practice of risk communication to inform and build trust with the public. No legitimate reason should stop the free press to report about crises, especially in its early stage.

Unfortunately, making early warning in a non-transparent social system poses particular challenges. Ophthalmologist Dr. Li Wenliang, a Chinese "whistleblower" who sent a warning message to his friend circle of medical doctors in late December 2019, was accused of disturbance of public order (Green 2020). In an authoritarian state like China, public conversation on many critical issues is restricted, media outlets are state-controlled, and dissidents and independent journalists are routinely silenced. Chinese citizens often resort to social media to receive and share news (including using proxy servers to access news outside China) but the authorities have a sophisticated censorship system to filter information (Fu, Chan, and Chau 2013), including messages related to the crisis (Zeng, Chan, and Fu 2017).

For instance, a Chinese social media message, which read (in English translation), "Wuhan pneumonia cannot be judged to be SARS. Wuhan has the only virus laboratory in the country and is also a world-class virology laboratory. There are ways to deal with the virus. If Wuhan can't figure it out, no one can handle it" was published in the afternoon of December 31, 2019. The post was swiftly censored within an hour, according to our monitoring system, Weiboscope.

Censorship social media in China

We analyze a unique dataset of Chinese social media and aim to evaluate how online information about the COVID-19 outbreak was restricted in China. Weibo is China's answer to Twitter and is the largest microblog service provider, with 497 million active monthly users in 2019 (Weibo Corporation 2019). We have been collecting Weibo data since 2011 via our research project Weiboscope (Fu, Chan, and Chau 2013). Weiboscope samples a list of high-profile users and a group of randomly selected users, whose posts are programmatically retrieved every 15-20 minutes by a cluster of computer servers. When the system detects a once-published post is missing in an attempt to retrieve a user's timeline, the post is then confirmed to be censored by the platform, i.e. return of error message of "permission denied" indicating fully censored message. Through such a process, social media posts made by 66,126 high-profile users and 52,268 randomly selected accounts are longitudinally traced and their post-publication censored messages are recorded. Since the high-profile users generate the vast majority of social media contents (Fu and Chau 2013) and the randomly sampled accounts represent the voice of general users, a combination of these two constitutes a fairly representative sample of the whole user population of Weibo. A censored message is defined as either a "permission denied" post or a retweet of a "permission denied" post. Ethical aspect of this project was approved by the Human Research Ethics Committee at the University of Hong Kong (EA260113).

Between December 1, 2019 and February 27, 2020, Weiboscope collected 11,362,502 posts, among which 1,230,353 (https://doi.org/10.6084/m9.figshare.12199038) contain at least an outbreak-related keyword[1] and 2,104 (1.7 per 1,000) have been censored. The daily censorship ratio (Figure 1) indicates a few early spikes, referring to some non-local coronavirus cases in Thailand, Japan, and South Korea, before the Chinese government's full disclosure on January 20. The spikes after January 20 correspond to the censorship of public reactions to Wuhan's lockdown (Jan 24), an alleged coverup by the Chinese Center for Disease Control and Prevention (Jan 30), whistleblower Dr. Li Wenliang's death (Feb 6), logistic problem of medical resources (Feb 10), and a patient's suicide (Feb 26).

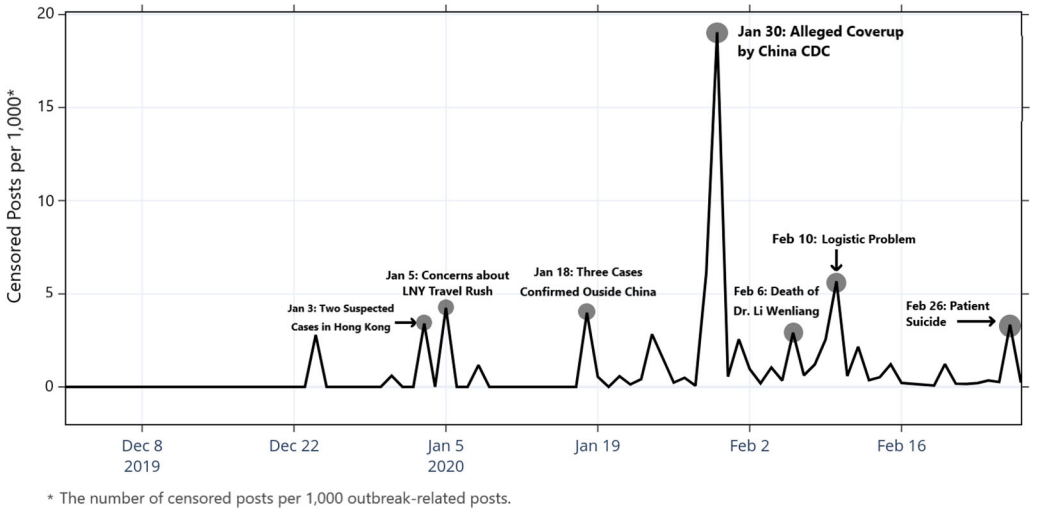

Figure 1. Daily censorship ratio (per 1,000 posts related to coronavirus outbreak).

Covering coronavirus in the global news

The above data analysis indicates online discussion on China social media was restricted. But how did the news media respond at the global level? To what extent was the world informed by the news media about the coronavirus even though the information about the first outbreak in China was limited? We then draw on another large dataset Global Database of Events, Language, and Tone (GDELT, Leetaru and Schrodt 2013), which records the world events reported by all national and international news on Google News. We aim to examine to what extent the mass media reported the coronavirus at the global level.

We downloaded the GDELT data between December 1, 2019 and March 31, 2020. We took advantage of each event item's first news report whose hyperlink contains the article title. For example, The Guardian's story titled "China's Sars-like illness worries health experts" on January 9, 2020 is structured like: https://www.theguardian.com/world/2020/jan/09/chinas-sars-like-illness-worries-health-experts. We identified all such news items whose title carries at least one of the following patterns in case-insensitive manner: "-coronavirus-", "-pneumonia-", or "-sars-". We excluded the events dated before December 1, 2019 and obtained 759,191 event entries from the database which linked to 163,714 unique news articles, i.e. multiple distinct events can link to the same article.

Figure 2 presents the daily trend of the events related to "coronavirus," "pneumonia," or, "SARS" as reported by the global news. As seen in the chart, there was almost a flat line before January 20, 2020 but indeed a few hundred events on average took place per day. Altogether, there were 3,155 events that happened before January 20, 2020, among which 1,616 (51.5%) happened in China, 317 (10.1%) in the United States, 182 (5.8%) in Thailand, 166 (5.3%) in Hong Kong, 142 (4.5%) in Japan, and 717 (29%) in other locations. This suggests that, even though the Chinese government did not make any official announcement about the coronavirus and only released very limited information to the public before January 20, a certain number of stories about coronavirus in China and the cases exported to other places were reported in the news media. Having said that, media attention is deemed relatively low.

Global media coverage on coronavirus began to rise after January 20, when Chinese government officially confirmed the local outbreak to the world. The number of news covered events, which were mainly related to the epidemic in China, increased drastically, and peaked at January 31, 2020, but the trend did not sustain in February. Starting from early February, the events count exhibited a declining trend until February 23. After that, the situations in Italy, Iran, South

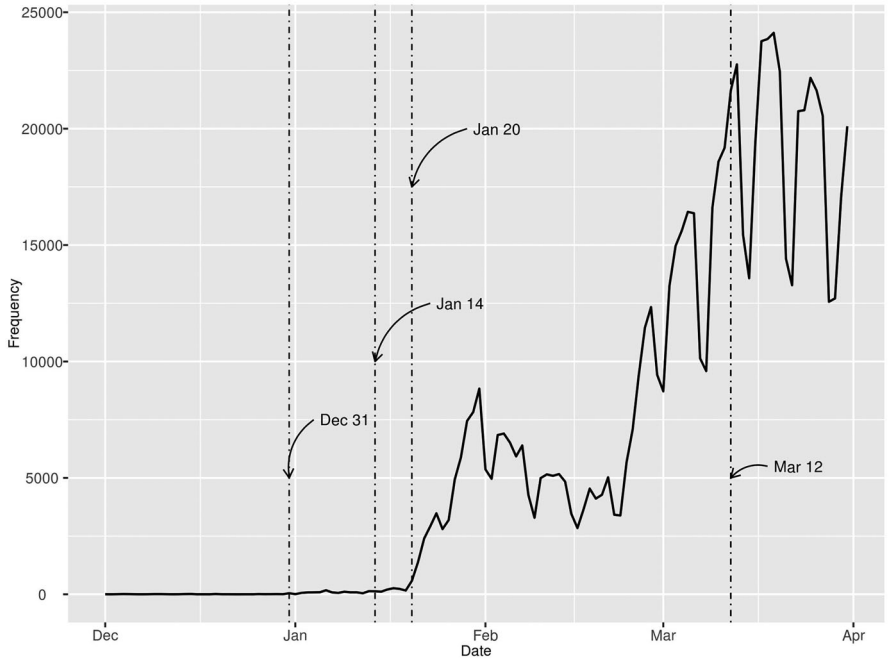

Figure 2. Daily numbers of events related to Coronavirus, Pneumonia, or SARS.

Korea, and many other places were getting worse and the event count skyrocketed between the last week of February and the first week of March. After the number of events almost reached the new height in early March, WHO declared the pandemic on March 12, 2020.

At the time of writing, the coronavirus pandemic is developing and the situation is changing every day. So this short perspective does not intend to give a comprehensive media analysis or a full account for the ultimate role of the mass media in crisis communication. Future in depth research into this subject is definitely warranted. We instead aim to offer a few observations on the basis of the above preliminary data analysis. First, Chinese authorities censored online discussion on the coronavirus and restricted the public access to early warning on social media. This is in contrast to the lesson learned in previous pandemics that transparency and proactive communication are essential to early detection and containment of pandemics (Fineberg 2014). The information control policy in China not only limited Chinese people to make necessary and timely responses to the outbreak, but it may have also delayed the global media attention to the upcoming crisis, according to the chart which shows very few news reports covered the coronavirus-related events before China broke the silence on January 20. In a global society, China's local information control policy is no longer locally impactful but has significant global implication; Second, the world seems to have missed or overlooked the early but weak warning signal before January 20, when the outbreak was developing in China and a growing number of cases were being exported to other places. Later in early February, in view of a reduction of news reports of events, the world also did not pay sufficient attention to the developing pandemic that was globally widespread. These time intervals are both critical periods for governments to develop risk preparedness and management strategies; Third, at least from a risk communication perspective, in considering the global attention was rising in the first two months of Year 2020, the WHO appeared to be too passive to give an official warning to the global society in response to the apparent escalation of reported coronavirus events around the world. Based on the data in the chart, the world had been well notified about the global epidemic from the mass media and social media before the WHO's declaration on March 12, which seems to be lagging behind the global epidemic as well as many people's expectations.

Note

1. Weibo posts pertinent to COVID-19 were identified according to a set of predefined keywords: '疫情' epidemic situation, '口罩' mask, '病毒' virus, '肺炎' pneumonia, '冠状' coronavirus,'感染' infected, '确诊' confirmed case, '隔离' quarantine, '防疫' combat the outbreak, '传染' infection, '新冠' novel coronavirus, '钟南山' Zhong Nanshan, '封城' lockdown, '非典' SARS, 'N95' N95, '李文亮' Li Wenliang, '蝙蝠'bat, '防护服'hazmat suit, '卫健委 'health commission, '世卫' WHO (abbr), '重症' severe, '疾控中心' CDC, '李兰娟' Li Lanjuan, '流行病' epidemiology, '华南海鲜市场' Huanan Seafood Market, '人传人' human-to-human transmission, '管轶' Guan Yi, '世界卫生组织' WHO, '消毒液' bleach, '洗手液' hand sanitizer, '危重' critically ill, '张文宏' Zhang Wenhong, 'CDC' CDC, '高福' Gao Fu, '穿山甲' pangolin, '粪口传播' fecal–oral transmission, 'WHO' WHO, '飞沫传播' droplets transmission, '疑似病例' suspected case, '潜伏期' incubation period. The keyword list was checked and confirmed by both bilingual authors to be sufficiently inclusive and specific.

Disclosure statement

No potential conflict of interest was reported by the authors.

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References

Fineberg, Harvey V. 2014. "Pandemic Preparedness and Response — Lessons from the H1N1 Influenza of 2009." *New England Journal of Medicine* 370 (14): 1335–1342. doi:10.1056/NEJMra1208802.

Fu, King-wa, Chung-hong Chan, and Michael Chau. 2013. "Assessing Censorship on Microblogs in China: Discriminatory Keyword Analysis and the Real-Name Registration Policy." *IEEE Internet Computing* 17 (3): 42–50. doi:10.1109/MIC.2013.28.

Fu, King-wa, and Michael Chau. 2013. "Reality Check for the Chinese Microblog Space: A Random Sampling Approach." *PloS One* 8 (3): e58356–e58356. doi:10.1371/journal.pone.0058356.

Green, Andrew. 2020. "Li Wenliang." *The Lancet* 395 (10225): 682. doi:10.1016/S0140-6736(20)30382-2.

Leetaru, Kalev, and Philip A. Schrodt. 2013. "GDELT: global data on events, location, and tone, 1979–2012." In *ISA annual convention*. http://data.gdeltproject.org/documentation/ISA.2013.GDELT.pdf

Ministry of Foreign Affairs, the People's Republic of China. 2020. "Foreign Ministry Spokesperson Hua Chunying's Daily Briefing Online on February 3, 2020." 2020. https://www.fmprc.gov.cn/mfa_eng/xwfw_665399/s2510_665401/2511_665403/t1739548.shtml.

National Health Commission. 2020. "Press Conference of the National Health Commission High-Level Expert Group Regarding the Pneumonia Caused by the Novel Coronavirus Infection." http://www.nhc.gov.cn/xcs/s7847/202001/8d735f0bb50b45af928d9944d16950c8.shtml.

Phillips, Nicky, Smriti Mallapaty, and David Cyranoski. 2020. "How Quickly Does the Wuhan Virus Spread?" *Nature, January* 10.1038/d41586-020-00146-w.

Weibo Corporation. 2019. "Weibo Reports Third Quarter 2019 Unaudited Financial Results." https://weibocorporation.gcs-web.com/news-releases/news-release-details/weibo-reports-third-quarter-2019-unaudited-financial-results.

World Health Organization. 2005. "Effective Media Communication during Public Health Emergencies." WHO. http://www.who.int/csr/resources/publications/WHO_CDS_2005_31/en/.

World Health Organization 2020. "Preliminary Investigations Conducted by the Chinese Authorities Have Found No Clear Evidence of Human-to-Human Transmission of the Novel #coronavirus (2019-NCoV) Identified in #Wuhan, #China." https://twitter.com/WHO/status/1217043229427761152.

Wuhan Municipal Health Commission. 2019. "Wuhan Municipal Health Commission's Situation Report of the Epidemic of Pneumonia in Our City (in Chinese)." http://wjw.wuhan.gov.cn/front/web/showDetail/2019123108989.

Zeng, Jing, Chung-hong Chan, and King-wa Fu. 2017. "How Social Media Construct 'Truth' around Crisis Events: Weibo's Rumor Management Strategies after the 2015 Tianjin Blasts." *Policy & Internet* 9 (3): 297–320. doi:10.1002/poi3.155.

Zhu, Yuner, King-Wa Fu, Karen A. Grépin, Hai Liang, and Isaac Chun-Hai Fung. 2020. "Limited Early Warnings and Public Attention to COVID-19 in China, January-February, 2020: A Longitudinal Cohort of Randomly Sampled Weibo Users." *Disaster Medicine and Public Health Preparedness* : 1–9. https://doi.org/10.1017/dmp.2020.68.