Combatting the Infodemic: Addressing Mis/Disinformation in Southeast Asia

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The rapid dissemination of information and global interconnectivity via the internet and social media has resulted in misinformation and disinformation becoming their own international public health crisis. Southeast Asia in particular, has suffered greatly from this problem in recent years, as the use of the internet and smartphones has increased significantly in the region. These problems can potentially interfere with public health efforts by undermining public trust, causing members of the public to delay seeking medical care, and spreading false remedy information. In light of the increasing prevalence of these issues, exploring effective countermeasures to combat mis- and disinformation is essential. This editorial provides examples of mis- and disinformation in Southeast Asia and suggests countermeasures that have been proposed to address the problem. Misinformation often is defined as "the unintentional spread of false or misleading information that is shared by mistake or under the presumption of truth," and disinformation is defined as "false, misleading, distorted, or isolated factual information that is spread deliberately with the intention to cause harm or damage" (NASEM, 2022).

One example of widespread misinformation in Southeast Asia is the dissemination of false information regarding the COVID-19 pandemic. In Indonesia, rumors circulated on social media that consuming high doses of vitamin C could prevent a COVID-19 infection. In the Philippines, false claims were made that the existence of the SARS-CoV-2 virus was a hoax. This kind of misinformation can have serious consequences, leading people to make decisions that risk their health and undermine public health efforts to contain the virus. According to a Center for Innovation and Strategic Transformation Studies (CIST) study, approximately 45% of misinformation about COVID-19 in Indonesia was spread through social media (Setiabudi, 2020). Another example occurred in Thailand, where misinformation about the efficacy of COVID-19 vaccines spread through social media. Furthermore, some people have used social media platforms to claim that vaccines are ineffective or that they can cause serious side effects (Reuters, 2021). In Vietnam, during a heightened period of the Covid-19 pandemic, inaccurate information was spread that the government had deployed the military and instituted a curfew. The state media became involved in refuting this instance of misinformation (Dao, 2021). As recently as April of 2023, inaccurate information about 140 new COVID-19 variants was being spread (Xuan, 2021).

Additional examples were described in a 2022 National Academies report on *Addressing Inaccurate and Misleading Information about Biological Threats through Scientific Collaboration and Communication in Southeast Asia* (NASEM, 2022). Topics that are associated with mis- and disinformation may relate to a scientific issue and may have a scientific foundation of facts associated with the false information. The technical evidence countering a claim may be strong and have hundreds of studies supporting a hypothesis or may be weak with few reliable sources of information, or extremely complex with inconclusive and/or highly uncertain scientific evidence.

As scientists, what can be done to address problems associated with mis- and disinformation? First, increasing the population's ability to recognize and assess the veracity of information and media literacy is essential so that people are better equipped to identify and reject false information. Various international organizations, such as the UNICEF, World Health Organization, and the U.S. National Academies of Sciences, Engineering, and Medicine have developed resources to assist scientists. A list of resources is included in Table 1. According to a study by the National University of Singapore, media literacy education is critical in reducing the spread of misinformation (Lim, 2020).

Second, the National Academies' report on *Addressing Inaccurate and Misleading Information about Biological Threats through Scientific Collaboration and Communication* highlights the importance of

collaboration among scientists, healthcare professionals, and technology companies by providing practical steps that stakeholders can take to assess mis- and/or disinformation, determine whether and how they should address it, and effectively communicate the corrective information (NASEM, 2022). A guide for scientists also was produced from this study (NASEM, 2022). Because a significant amount of false information involving scientific issues is generated and spread through social media, one recommendation from this report is that social media companies should be held responsible for removing false information from their platforms and penalizing those who spread it.

Third, scientists can use machine learning and natural language processing as other approaches to detect and remove false information from social media platforms (Global Risk Insights, 2018). ChatGPT is among the newest artificial intelligence (AI) tools to emerge and is able to generate new content based on available information sources. This and other generative AI tools have become a powerful way to disrupt the spread of mis/disinformation (Haataja, 2022). However, these tools have also been shown to introduce potential biases by using automated systems to compile or remove information, possibly creating new mistakes and false content. Possible roles that astute scientists may play is to identify and correct errors generated by artificial intelligence, and/or assist artificial intelligence developers in identifying methods for detecting errors that might be propagated.

Fourth, governments and international organizations such as the United Nations, UNESCO, international media and journalism organizations, and human rights organizations should work together to develop guidelines and regulations that help to address the problem of mis- and/or disinformation. Independent and government fact-checking organizations have been established internationally and in the Southeast Asia region that quickly and effectively can identify and flag false information. For example, the International Fact-Checking Network, a unit of the Poynter Institute, has developed a code of principles for fact-checkers that is widely used by organizations worldwide (IFCN, 2023). SciCheck, a component of FactCheck.org that is hosted by the Annenberg Public Policy Center of the University of Pennsylvania, provides continually updated analyses of scientific mis- and disinformation. Similarly, the Indonesian Anti-Defamation Society (*Masyarakat Anti Fitnah Indonesia*) was created to counter false information, including false public health information (Indonesian Anti-Defamation Society, 2023) and the Indonesian government works to address misinformation in coordination with fact-checking organizations. Likewise, the Malaysian Ministry of Health created COVIDNOW during the pandemic to enhance data sharing about the COVID-19 pandemic with the public (Ministry of Health Malaysia, 2021), Thailand created an Anti-Fake News Center, and Singapore created Factually (Schuldt, 2021).

In conclusion, the widespread availability of the internet has led to the proliferation of mis- and disinformation, making this a significant issue in Southeast Asia and throughout the world. This problem can have far-reaching consequences, including, threatening public health, eroding public trust and resulting in a misallocation of vital resources. Cooperation among governments, social media companies, and international organizations are crucial for addressing this problem and protecting people from the harm caused by false information. Moreover, efforts to improve media literacy and awareness among the population are necessary to minimize the damage caused by mis- and disinformation. It is evident that taking a collaborative approach to solve this problem and find effective solutions is essential.

Table 1. Examples of International Resources for Countering Misinformation[¥]		
Organization	**Resource**	**URL**
European Commission	Fighting disinformation	https://commission.europa.eu/strategy-and-policy/coronavirus-response/fighting-disinformation_en#identifying-conspiracy-theories
OECD	Combatting COVID-19 disinformation on online platforms	https://read.oecd-ilibrary.org/view/?ref=135_135214-mpe7q0bj4d&title=Combatting-COVID-19-disinformation-on-online-platforms
UNCEF	2022 Key Results for Children	https://www.unicef.org/indonesia/media/15541/file/Indonesia%202022%20Key%20Results.pdf
	Toolkit to spread awareness and take action on COVID-19	https://www.unicef.org/indonesia/media/4191/file/Toolkit%20to%20Spread%20Awareness%20and%20Take%20Action%20on%20COVID-19.pdf.
	COVID-19: What you should know and how to protect yourself	https://www.unicef.org/indonesia/coronavirus.
	Education to combat hoax (YouTube, Indonesian)	https://youtu.be/tVIbsjZ9j74
UNESCO	Think Before Sharing - Stop the spread of conspiracy theories	https://en.unesco.org/themes/gced/thinkbeforesharing
	Addressing conspiracy theories through education: UNESCO guidance for teachers	https://www.unesco.org/en/articles/addressing-conspiracy-theories-through-education-unesco-guidance-teachers
U.S. National Academies of Sciences, Engineering, and Medicine	Scientist's Guide for Countering Misinformation	https://nap.nationalacademies.org/resource/26466/interactive/
World Health Organization	Infodemic Management	https://openwho.org/channels/infodemic-management
	Q&A: How to combat the infodemic with digital solutions to reduce health risks during the COVID-19 pandemic and beyond	https://www.who.int/europe/news/item/27-06-2022-q-a--how-to-combat-the-infodemic-with-digital-solutions-to-reduce-health-risks-during-the-covid-19-pandemic-and-beyond
	How to report misinformation online	https://www.who.int/campaigns/connecting-the-world-to-combat-coronavirus/how-to-report-misinformation-online

[¥] UNICEF and WHO resources were referenced in the 2022 report on Addressing Inaccurate and Misleading Scientific Information about Biological Threats through Scientific Collaboration and Communication and associated How-to-Guide.

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