



**Universitas Sriwijaya**  
Faculty of Public Health

## **PROCEEDING BOOK**

**THE 3<sup>rd</sup> SRIWIJAYA INTERNATIONAL  
CONFERENCE OF PUBLIC HEALTH**

**Theme :**

**“ The workplace Initiative : Health, Safety and  
Wellbeing Regarding COVID - 19 ”**

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**PROCEEDING  
THE 3<sup>rd</sup> SRIWIJAYA INTERNATIONAL  
CONFERENCE ON PUBLIC HEALTH**

*The Work Place Initiative: Health, Safety and Wellbeing  
Regarding COVID-19*

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Grand Atyasa Palembang, 21<sup>st</sup> – 22<sup>nd</sup> October 2021

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*The Work Place Initiative: Health, Safety and Wellbeing  
Regarding COVID-19*

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Ima Fransiska, S.Sos

# PREFACE

On behalf of the organizing committee, I am delighted to welcome you to the 3<sup>rd</sup> Sriwijaya International Conference on public Health (SICPH 2021) during 21<sup>th</sup> October 2021 at Palembang South Sumatera, Indonesia. The SICPH 2021 is international conference organized by Faculty of Public Health, Sriwijaya University (UNSRI). I would like to extend my warmest welcome to all the participant of The SICPH 2021 under the theme *“The Impact of Climate Change on Infectious Disease Transmission”*.

The SICPH 2021 consists of keynote sessions from well known expert speakers in the field of public health, and academic paper sessions (oral presentations) who are coming from several region. This conference seeks to bring together academics, public health professionals, researchers, scientists, students and health stakeholders from a wide range of disciplines to present their latest research experience and further development in all areas of public health. We hoped that this conference will be usefull platform for researchers to present their finding in the areas on multidisciplinary realted to public health and health system issues.

This conference will provide opportunities to exchange ideas, knowledge, and development of the latest research among the participants. We will publish the paper as output from the SICPH 2021 in proceeding book with ISBN and selected paper will be published in Jurnal ilmu kesehatan masyarakat- SINTA 3 (a nationally-accredited journal). The SICPH 2021 is being attended by about 50 participants. I hope you enjoy the conference.

With regard to considerable conference agenda, we greatly appreciate any support and sponshorship derived from any governmental as well as private institutions for the success of the conference. Great appreciation is also handed to organizing committe of the conference for any voluntarily effort that bring to the succes of the conference.

The conference committee expresses its gratitude towards all the keynote speakers, authors, reviewers, and participanst for the great contribution to enssure the succes of this event. Finnally, I sincerely thank all the members of the organizing committee who have worked hard to prepare this conference.

**Palembang, October 2021**

**Chair,**

**Anita Camelia, SKM., MKKK.**



# PREFACE



First of all, let us thank God, the Almighty, who has given His grace and guidance so that the 3rd Sriwijaya International Conference of Public Health (SICPH) with the theme of The Workplace Initiative: Health, Safety and Wellbeing Regarding Covid:19 can be held successfully. I welcome all of you to this seminar which has received great attention not only from university, but also other communities to submit papers to be presented in this seminar. I express my highest gratitude and appreciation the presenters.

The conference is divided in two session, the first session is speeches and the second session is round table discussion. In the first session, the invited keynote speakers were Prof. Dr. Tan Malaka, MOH, DrPH, SpOk, HIU (A Professor from Medical Faculty Universitas Sriwijaya), Prof. Dr. Retneswari Masilamani (University Tunku Abdul Rahman, Malaysia), Prof.Dr.Joselito L. Gapaz MD, M.PH(University of the Philippines) and Prof. Dr Tjandra Yoga Aditama, MHA,DTM&H, DTCE,SpP(C).FIRS (Professor from Griffith University, Australia)

Of course, this conference activity would not have succeeded without the support of all parties involved, as well as the presence of all participants in all regions in Indonesia and internationally. I especially thank to all the organizing committees for their hard work, perseverance, and patience in preparing and organizing this conference so that it can go well, smoothly and successfully.

Finally, through this conference let us extend the network and cooperation among all stakeholders of the public health sector, especially in Indonesia and in the world in general, to build a better public health world in Indonesia

Thank you for participating in this conference.

**Dean of Public Health Faculty,  
Universitas Sriwijaya**

**Dr. Misnianti, S.K.M, M.K.M**

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## ANALYSIS OF PUBLIC SEARCH INTEREST IN HOAX AND CONSPIRACY TOWARDS INCREASING OF COVID-19 CONFIRMED CASES IN INDONESIA: STUDY GOOGLE TRENDS

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### ABSTRACT

*The increasing of COVID-19 cases has consistently been followed by the occurrence of an infodemic phenomenon. There is dangerous misinformation and rumors like conspiracy theories, including nonsensical explanations for this pandemic. This study aims to analyze the public search interest for hoaxes and the conspiracy of COVID-19 towards the increasing of confirmed cases in Indonesia through google trends. The keywords of "covid lie, corona lie, corona hoax, covid hoax, covid lie, corona lie" and "covid conspiracy, corona conspiracy, coronavirus conspiracy" through Google trends, was carried out between 31 December 2019 - 10 September 2020. The data were compared with daily data on Covid-19 cases through time-lag and Pearson correlation ( $p < 0.005$ ). There is a significant negative correlation ( $p\text{-value} < 0.05$ ) between "covid hoax" and "covid conspiracy" with confirmed cases due to COVID-19 in Indonesia. Google trends can be used as an early warning system in identifying patterns of public unrest and can be used as a reference in government policy making as well as the right way of communicating risks to society during the COVID-19 pandemic.*

**Keywords:** COVID-19, Google trends, hoaxes, conspiracies

### ABSTRAK

Peningkatan kasus COVID-19 secara konsisten diikuti dengan terjadinya fenomena infodemic. Ada misinformasi dan rumor berbahaya seperti teori konspirasi, termasuk penjelasan yang tidak masuk akal untuk pandemi ini. Penelitian ini bertujuan untuk menganalisis minat penelusuran masyarakat terhadap hoax dan konspirasi COVID-19 terhadap peningkatan kasus terkonfirmasi di Indonesia melalui google trend. Kata kunci "kebohongan covid, kebohongan corona, hoax corona, hoax covid, kebohongan covid, kebohongan corona" dan "konspirasi covid, konspirasi corona, konspirasi virus corona" melalui Google Trends, dilakukan antara 31 Desember 2019 - 10 September 2020. data dibandingkan dengan data harian kasus Covid-19 melalui jeda waktu dan korelasi Pearson ( $p < 0,005$ ). Terdapat korelasi negatif yang signifikan ( $p\text{-value} < 0,05$ ) antara "covid hoax" dan "covid konspirasi" dengan kasus terkonfirmasi akibat COVID-19 di Indonesia. Google Trends dapat digunakan sebagai early warning system dalam mengidentifikasi pola keresahan masyarakat dan dapat dijadikan acuan dalam pengambilan kebijakan pemerintah serta cara yang tepat dalam mengkomunikasikan risiko kepada masyarakat selama masa pandemi COVID-19.

**Kata kunci:** COVID-19, Google tren, hoax, konspirasi

## Introduction

At the end of December 2019, a 55-year-old man and 66% of the staff at the Wet Market Seafood Wholesale Center, Huanan Seafood Wholesale Market, in Wuhan, Hubei, China were infected. Mysterious pneumonia is characterized by fever, dry cough, and fatigue. This disease was later diagnosed as a new disease named *Coronavirus Disease* (COVID-19) caused by the new virus *CoV Severe Acute Respiratory Syndrome-2*. In early 2020, the coronavirus pandemic has infected a large number of people around the world. Countries closed their borders, announced *lockdowns* and people were asked to follow protective measures against the new coronavirus such as physical distancing or washing hands.<sup>1,2</sup>

Since January 30, 2020, the International Health Regulations Emergency Committee WHO has declared the COVID-19 outbreak a Public Health Emergency of International Concern (PHEIC).<sup>3</sup> On 27 August 2020, the World Health Organization (WHO) stated that the overall COVID-19 case fatality rate reached 3.4% worldwide.<sup>4</sup> This increase in the number of COVID-19 cases is consistently followed by the occurrence of an infodemic phenomenon. Fake news spreads faster and easier than this virus, and is just as dangerous.”<sup>5,6</sup>

The COVID-19 pandemic has spawned a parallel pandemic of dangerous misinformation and rumors in the form of conspiracy theories, including absurd explanations about the origin of the virus, how to cure it, and who is to blame for its spread. Conspiracy theories in the name of science, facts, and belief in institutions, and pose a direct threat to individuals and communities.<sup>7</sup>

Conspiracy theories have always existed, but the ongoing pandemic is proving to be a very fertile ground for its spread. UNESCO Director General Audrey Azoulay underlined that misinformation and rumors regarding the pandemic and other issues are a grave danger. Conspiracy theories cause real harm to public health and safety by reinforcing and legitimizing misconceptions about the pandemic, and reinforcing stereotypes that can fuel violence and violent extremist ideology.<sup>7</sup>

This study will analyze public interest in the search for hoaxes and COVID-19 conspiracies to the addition of confirmed cases in Indonesia through the media google trends.

## Method

*Google Trends* serves to analyze a popular keyword that is sought after by Google users, the searched keyword can be compared with other keywords so that we can find out the search spikes that occur and be analyzed. The search was conducted in the range of December 31, 2019 to September 10,

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2020. The keywords selected were "covid lies", "corona lies", "corona hoaxes", "covid hoaxes", "covid lies", "corona lies" and "covid conspiracy", "corona conspiracy", "coronavirus conspiracy" from the same time period. The keywords sought are information about public knowledge and how people respond to untrue news and conspiracies. After getting the search results, the association of each spike was then carried out and analyzed. The GT data was then compared with daily data on Covid-19 cases collected from the website official of the task force for the acceleration of Covid-19 handling in Indonesia ([www.covid19.go.id](http://www.covid19.go.id)).

Moving averages with three-day intervals of GT data and the number of Covid-19 cases are entered into the graph to assess search movement patterns. This moving average is used to facilitate comparison of GT trends against the dataset. The time-lag correlation was used to assess whether the increase in GT data correlated with an increase in Covid-19 cases, as has been applied in previous studies.<sup>8,9</sup>

## Results

The search patterns around information about Covid-19 with the keywords "covid lies", "corona lies", "corona hoaxes", "covid hoaxes", "covid lies", "corona lies in Indonesia" and "covid conspiracies", "corona conspiracies", "coronavirus conspiracies" conducted from 31 December 2019 to September 10, 2020 is shown in **Figure 1**.

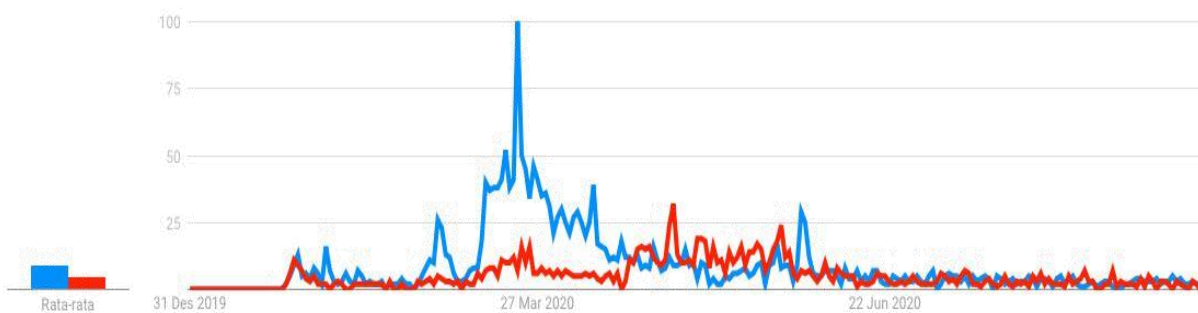
The search pattern using the keywords "covid lie", "corona lie", "corona hoax", "covid hoax", "covid lie", "corona lie in Indonesia" are very fluctuated. There are 5 peaks search for corona in Indonesia. The first peak occurred on March 2, 2020 at this time Indonesia first confirmed cases of Covid-19, it was reported that two Indonesians were positive for the Corona virus, namely a 31-year-old woman and her 64-year-old mother. (10)

The second peak was March 16, Kominfo reported several hoax findings, one of which was that it was reported that the President of the Republic of Indonesia Joko Widodo was positive for Covid-19, this was known through a chain message via WhatsApp and a chain message also appeared stating that hot lemon can kill the corona virus. This is just a hoax because until now the Covid-19 drug has not been found. (11)

The third peak of searches with the keywords "covid lie", "corona lie", "corona hoax", "covid hoax", "covid lie", "corona lie in Indonesia", which occurred on March 22, 2020, at that time Kominfo reported many hoax issues related to Covid-19, one of which was Vladimir Putin sending 800 tigers and

lions so that residents stayed at home during the Covid-19 pandemic. This supported by a chain message accompanied by a photo of a lion that was free on the highway. After further checking on the truth of the news, it turned out that the photo of the lion had been circulating on the internet since April 2016, long before the Corona Covid-19 virus first appeared in Wuhan, China, in December 2019, so the news was confirmed as a hoax. (12)

The third peak occurred on April 10, 2020, at that time the Minister of Communication and Information (Menkominfo) reported that there are 187 hoax issues related to Covid-19.(13) These issues were found on various digital platforms, on April 10 there was also a case of a housewife being arrested for spreading false rumors through Facebook media, the hoax issue spread by this person had disturbed residents, it was reported that the suspect stated that there were already Covid-19 patients at Soetomo Hospital Surabaya.(14)



**Figure 1. Google trends with the keywords "covid lie, corona lie, corona hoax, covid hoax, covid lie, corona lie in Indonesia" and "covid conspiracy, corona conspiracy, coronavirus conspiracy"**

The fourth peak occurred on June 1, 2020 where the Minister of Communication and Information updated data on Hoax issues from January to June to 850 cases of hoax issues related to Covid-19, some of the hoaxes that shocked the Indonesian people were news that stated that from the results of Singapore research, Covid-19 in Indonesia would end on June 6, 2020. This news confirmed by Kominfo is a hoax(15) and there were also hoaxes stated that Covid-19 could be cured with eucalyptus oil.(16)



The search pattern using the keywords “covid conspiracy”, “corona conspiracy”, “coronavirus conspiracy in Indonesia” are very fluctuated. There are 2 peaks of corona searches in Indonesia. The first peak of searches with the keywords “covid conspiracy”, “corona conspiracy”, “coronavirus conspiracy in Indonesia” occurred on April 30, 2020, when Jerinx SID and dr. Tirta Hudhi had a discussion about the conspiracy theory of the corona virus or COVID-19 on Instagram live on Wednesday, April 29, 2020. Since this morning the hashtag #jrxsid has become a trending topic on Indonesian Twitter on Thursday, April 30, 2020.(17) The second peak occurred on May 7, 2020, at that time news emerged about Jerinx assuming the virus was only engineered by the global elite, one of the global elites he often mentions is Microsoft owner Bill Gates.(18)

Data regarding queries related to search keywords for “covid lies (*bohong covid*)”, “corona lies (*bohong corona*)”, “corona hoaxes (*hoax corona*)”, “covid hoaxes (*hoax covid*)”, “covid lies (*dusta covid*)”, “corona lies (*dusta corona*)” and “covid conspiracies (*konspirasi covid*)”, “corona conspiracies (*konspirasi corona*)”, “coronavirus conspiracies (*konspirasi coronavirus*)” can be seen in table 1 describes the pattern of people's search habits in Indonesia. Based on available data, searches in Indonesia are generally about coronavirus hoaxes and conspiracy theories. The distribution of cities with the most searches regarding covid, coronavirus and corona can be seen in **table 2**. The cities of Lampung and Bali were found to be the cities with the most searches regarding Covid-19, “covid lies (*bohong covid*)”, “corona lies (*bohong corona*)”, “corona hoaxes (*hoax corona*)”, “covid hoaxes (*hoax covid*)”, “covid lies (*dusta covid*)”, “corona lies in Indonesia (*dusta corona di Indonesia*)” and “covid conspiracies (*konspirasi covid*)”, “corona conspiracies (*konspirasi corona*)”, “coronavirus conspiracies (*konspirasi coronavirus*)”.

**Table 1. Queries related keywords that available in Indonesia**

Hoax covid		Conspiracy covid	
English	Indonesia	English	Indonesia
Corona Hoax	Hoax corona	Covid Conspiracy	Konspirasi covid
Covid Hoax	Hoax covid	Corona Conspiracy	Konspirasi corona
Corona liar	Bohong corona	Coronavirus Conspiracy	Konspirasi coronavirus
Liar covid	Bohong covid		
Liescorona	Dusta corona		
Liescovid	Dusta covid		

Based on figure 2, every keyword has a fluctuating peak. There are five peaks search for the keyword "covid hoax (*hoax covid*)" and 2 peak searches for the keyword "covid conspiracy (*konspirasi*

covid)". The keyword "covid hoax (*hoax covid*)", is the most searched compared to other keywords, namely "covid conspiracy (*konspirasi covid*)".



**Figure 2. Comparison of interest in keyword searches related to hoaxes and COVID-19 conspiracies and the addition of confirmed cases on 31 December 2019 to 2 September 2020**

Validation using correlation *Pearson* showed a significant correlation ( $p\text{-value} < 0.05$ ) between data *googletrends* "covid hoax" and "covid conspiracy" with confirmed cases due to COVID-19 in Indonesia. These results indicate that there is a significant relationship between the search for "covid hoaxes" and "covid conspiracy" with confirmed cases due to COVID-19 (**Table 3**). All data search for "corona hoax" and "covid conspiracy" have a negative pearson correlation coefficient value, which means there is a negative correlation between "covid hoax" and "covid conspiracy" to the increasing of the number confirmed cases. This means that there will be an increase in searches for "covid hoaxes" and "covid conspiracies" one to three days before, and one to three days after, and on the day of the decline in COVID-19 cases.

**Table 3. Results of the Time-lag Pearson correlation analysis for the keywords "corona hoax" and "corona conspiracy" towards the increasing of confirmed cases of COVID-19 in Indonesia.**

Key words	Day						
	-3	-2	-1	0	1	2	3
"Corona Hoax"	-0,311*	-0,314*	-0,308*	-0,311*	-0,311*	-0,307*	-0,303*
"Corona Conspiracy"	-0,177*	-0,176*	-0,179*	-0,177*	-0,163*	-0,159*	-0,149*

\*Significant,  $p\text{-value} < 0.05$  in the correlation analysis test *Pearson*

## Discussion

The peak search for the keyword “hoax covid” occurred on March 2, 2020, March 16, 2020, March 22, 2020, April 10, 2020 and June 1, 2020. This was similar to the findings of the Ministry of Communication and Information of the Republic of Indonesia (KOMINFO) on its official website that reporting the findings of hoaxes related to the corona virus. The hoaxes such as the presence of corona virus sufferers in China who were not treated but were immediately euthanized, the government hides the corona case (2 March 2020), President Jokowi President positive Corona, hot lemons can kill cancer cells and associated with corona, Corona suspect escapes from Persahabatan Hospital (16 March 2020), UK unrest due to COVID-19 lockdown, Vladimir Putin releases 800 tigers and lions to keep people stay at home (22 March 2020), Baturaja Lockdown starts April 10 for 14 days (10 April 2020), and video activities restrictions in Surabaya from 1 June 2020 (1 June 2020).<sup>(19-21)(11)(22)</sup> The keywords searches for “corona conspiracy” have increased since entering April even though the number of new cases of COVID-19 infection has begun to increase in Indonesia. This is because on April 30, 2020, a news about the conspiracy theory put forward by Jerinx SID and discussion with dr. Tirta was issued.<sup>(23)</sup> The keywords searches for "hoax covid" and "covid conspiracy" is not very constant along with the addition of confirmed cases of COVID-19. The contrary, these keywords search can make the people more vigilant to avoid the hoax and conspiracy issues, so that the increase in the number of confirmed cases was not significantly affected. This shows that the people's habit of seeking information based on curiosity, so they not to be deceived by untrustworthy issues related to COVID-19. The Covid-19 pandemic not only spreads the corona virus throughout the world, but also spreads an infodemic as the fake news. The overflow of information about the corona outbreak makes it difficult for people to get right information and news. In the end, they choose quality information that offered by media organizations who implement the principles of journalistic ethics. (24)

Analysis of *the time-lag correlation* showed different results with a previous study in which all the search keywords people showed a positive correlation with the case Covid-19. (25) The influence of peer groups, mass media coverage, government policies, social media interactions, can influence health-seeking behavior so that it has an impact on people's attention which at the beginning of the pandemic tends to be high, but this attention decreases over time.

## Conclusion

Data from google trends related to the search for the keywords "covid hoax" and "covid conspiracy" form a unique pattern. Every peak that occurred in the search for these two keywords, on the contrary, did not cause a significant increase in the addition of confirmed cases of COVID-19. Based on the analysis conducted, Google Trends can be used as an *early warning system* to find out the pattern of public unrest during the COVID-19 pandemic and can also be used as a reference in implementing government policy making and the right way of communicating risks to the community during the COVID-19 pandemic.

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## Conflict of Interest

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