Indonesian's Risk Perception Level of COVID-19 Based Media Type and Media Exposure Delivering COVID-19 News in The Early Stage of the COVID-19 Outbreak

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Keywords : Risk Perception, Media Type, Media Exposure, Pandemic, Covid-19 Outbreak

Abstract : The risk perception data of the Indonesian people at the beginning of the COVID-19 outbreak remains undiscovered. In fact, during that period, regardless of the COVID-19 news appearing all the time in all media, Indonesian behaviour did not show any concern about that highly infectious virus. They continued to express normal activities despite the news being everywhere. It seemed the news exposure was meaningless for them. Therefore, this research aims to determine whether exposure to the media about COVID-19 also defines people's risk perception toward the COVID-19 virus during the early stage of the pandemic. This study involved three variables: the type of media used to update COVID-19 news (X1), the frequency of exposure to COVID-19 news (X2) and the public's risk perception of the COVID-19 virus (Y). The 1468 research subjects were Indonesian people who used the media to look out for the development of the pandemic. The data collection tool is the risk perception scale developed by Ropeik (2002). Data was collected online using the Googleform application, which spread to 23 provinces. The study's results were, first, descriptively, during the early days of the pandemic, the Indonesian people's risk perception of COVID-19 was already high and evenly distributed in all 23 provinces despite their behaviour. Second, social media is the most widely accessed type of media. However, the types of media used to update COVID-19 news significantly correlate with risk perception. Third, the frequency of exposure to COVID-19 news in the media and the public's risk perception of the COVID-19 virus are significantly correlated. Meaning that the higher the media exposure, the higher the risk perception of COVID-19 would be - and vice versa. The results will be discussed further.

INTRODUCTION

The COVID-19 pandemic, defined by the World Health Organization (WHO) from March 2020 to May 2023, has become a monumental history in modern human civilisation. WHO noted that the updated number of COVID-19 cases worldwide reached 770,437,327, with pandemic fatalities reaching 6,695,900. In the Indonesian context, 6,813,287 cases accumulated, and fatalities reached 161,918 people (World Health Organization, 2023). Ourworldindata.org noted that within the first three months, the initial variant of COVID-19 had travelled to 192 countries, with a record 6,670,000 new cases since the first spread in Wuhan in December 2019 (ourworldindata.org, 2023). The spread pace is the main characteristic of COVID-19. Thus, it is unsurprising that - three months after the first outbreak - WHO announced that the entire world was in a COVID-19 pandemic status on March 11, 2020. Indonesia was one of the countries whose population had been infected with COVID-19 when the pandemic status was enforced. The period when WHO announced the pandemic

level was then known to be the initial period of the COVID-19 pandemic.

The policy related to the COVID-19 outbreak in the early period of the pandemic was characterised by various dynamics. The Indonesian government immensely managed to reduce the potential for COVID-19 infection by establishing large-scale social restriction regulations (PSBB) and new normal policies by implementing standard health protocols, working from home (WFH), and attaching Polymerase Chain Reaction (PCR) test results. Rapid, rapid antigen, or rapid antibody tests for intercity public transportation passengers (kemlu.go.id, 2023). The government's concern is also indicated by the massive allocation of the State Revenue and Expenditure Budget (APBN) for dealing with the pandemic. In 2020 alone, the government spent 800 trillion rupiah to mitigate the impact of the pandemic (cnnindonesia.com,2020). Meanwhile, for 2021, the APBN amounting to 744.8 trillion rupiah has been disbursed to enforce the COVID-19 mitigation program (kemenkeu.go.id, 2023).

The government worked hard to reduce the spread of the COVID-19 virus. However, in the initial period of the pandemic, people perceived and responded to COVID-19 in various ways. Several community groups independently implemented independent lockdowns to avoid virus infections at the family, neighbourhood and certain community unit levels (Syambudi dan Amali, 2020). In fact, since March 3 2020, the authority in Tegal town, Central Java, has implemented a city-level lockdown for four months (Rachmawati, 2021). The anxiety about COVID-19 was a typical public response suffered in the early period of the pandemic. Data shows that 7.6% of Indonesians experience high anxiety (Rinaldi & Yuniasanti, 2020).

Meanwhile, Yusfarani's research reported that half of the teenagers in Palembang experienced psychosomatic tendencies during the pandemic (Yusfarani, 2021). In addition, findings from online counselling practised by the research team found that three out of five clients had strong indications of anxiety from viral infections. Furthermore, the community's response, such as self-isolation and the massive occurrence of anxiety and psychosomatics in society, indicated that they perceive COVID-19 as a severe risk.

Another side of the public's perception of COVID-19 was that many resident groups were less concerned about the risk of being exposed to the COVID-19 virus by continuing their daily activities. These groups knew the dangers of COVID-19 but were also confident they would not be exposed to the virus or affected (Tanjung, 2020). These groups of people were less concerned about the risk of being infected with the virus by developing an optimistic bias towards COVID-19. The last groups were dominated by low economic residents who had to continue working to meet their daily needs. They were basically worried about viral infections but more worried if their members could not eat. Apart from that, several groups did not care about the pandemic because they believed the virus was a conspiracy and there was no need to be afraid of it. This issue also caused the vaccination program to run slowly (Pinandhita, 2021).

This phenomenon showed the fact that people's perception of risk for the COVID-19 virus varies. On the one hand, the public perceived the virus as highly risky, so they responded by behaving obediently in implementing health protocols. Among them, even psychosomatic symptoms appeared. On the other hand, various groups of society unmeritedly perceived and even rejected the existence of COVID-19, resulting in various anti-covid campaigns like refusing vaccines.

Like the initial period of the COVID-19 pandemic, variations in risk perception were a typical response to a new and uncertain phenomenon (Paek & Hove, 2017). Risk perception is a person's risk evaluation of particular objects based on cognition and affection. This definition means that a person's basis for perceiving the risk of something does not always have to be rational. It could be the emotion of fear that dominates risk perception (Ropeik, 2002). Ropeik also added that, in facing

new, uncertain situations such as the COVID-19 pandemic, society, in general, prioritises the emotion of fear. In the context of a pandemic, this fear is the basis for the polarity of attitudes in society: fear of the virus so they make behavioural adjustments to avoid being infected, or fear that their livelihood will disappear, so they ignore the risk of being exposed to COVID-19.

Various investigations of risk perception regarding COVID-19 have been demonstrated. Based on the literature review from multiple countries, it showed that the public's risk perception of COVID-19 in the early period of the pandemic was relatively high (Alsharawy et al., 2021; Cori et al., 2020; Ding et al., 2020; Dryhurst et al., 2022). Investigation of this theme in the context of Indonesian society also raised similar category levels (Darwin et al., 2021; Fatmawati & Hendrayani, 2020; Nanda et al., 2021; Robbi et al., 2022; Siswati et al., 2021; Tejamaya et al., 2021). These results led researchers to explore various factors that determine people's risk perception of COVID-19, such as environment/workplace (Akhrani et al., 2022; Karasneh et al., 2021; Robbi et al., 2022), values (Diana et al., 2021; Dryhurst et al., 2022), voluntariness, visibility, and certainty (Cori et al., 2020). Furthermore, there is a review by Cipolletta, a synthesis of various risk perception articles on COVID-19. He categorised five major determinants of COVID-19: 1) Participation in preventive behaviour and following government recommendations. 2) Demographic factors such as age, gender, income, employment, and education. 3) Geographical factors, 4) Timing factors. 5) Personal factors such as health status, COVID-19 knowledge, well-being, political orientation, trust, personality and conspiracy mentality, optimistic bias and positivity, the direct and indirect experience of COVID-19, the propensity to vaccinate, and mass media exposure (Cipolletta et al., 2022).

The media exposure factor is then the focus of this article. The reason is that the initial COVID-19 outbreak was a tricky situation. On the one hand, society faced a real, rapidly contagious, but invisible "enemy". The survivors only found out about the attack through the results of a series of medical examinations, the symptoms that appeared after several days of infection (in many cases, even survivors were found without symptoms), and the loss of life. People did not know and were not aware of when, where, and how they were infected.

On the other hand, today's society is characterised by high-speed digital transmission. The implication is that news about COVID-19 can be transmitted globally in light speed. Depoux's article analyses that the atmosphere of panic over COVID-19 is transferring much quicker than the spread of the virus (Depoux et al., 2020). The perfect example is the first period when the virus infected residents of Wuhan city, China, in December 2019. In a short time, the news was broadly transmitted and became the attention of the world community. Since then, the development and spread of COVID-19 have become compulsory news on various media platforms. In the early period of the pandemic, multiple media, including print, electronic, digital, and social media, were overwhelmed by COVID-19-related news. Concisely, in the early days of the pandemic, people were never sure whether the virus existed around them, but for the information and the results of medical examinations.

Based on this condition, an assumption can be developed that basically the public's risk perception of COVID-19 is closely related to exposure to COVID-19 news on information channels such as mass media, electronic media, online media, and even social media. Research in Jordan, for example, the frequency of media exposure and sources of information regarding COVID-19 correlated with the level of risk perception (Karasneh et al., 2021). In addition, an investigation of 886 Bolivian citizens produced similar results. Whereas people were increasingly exposed to COVID-19 news in the media, their level of risk perception became higher. (Rivas et al., 2021). Meanwhile, national research in Italy, with almost 9,000 respondents, showed that the media played a significant role in directing people's thoughts and feelings

during the early days of the pandemic. (Zanin et al., 2020). In the Indonesian context, an online survey of COVID-19 information sources when the pandemic entered its second month in Indonesia showed that people updated COVID-19 information from social media (85.2%) and online news (82.2%) (Tejamaya et al., 2021). Apart from that, media exposure at the start of the pandemic emphasised narratives of worry and fear rather than narratives that were solutions (Fahrimal et al., 2020). These results are strengthened by data that the COVID-19 news update received the most exposure compared to other menus, namely 11 times the news. (Rosfiantika et al., 2020).

Based on the research results above, there have been many reviews from various countries regarding media exposure to risk perceptions in COVID-19. In the Indonesian context, various media analyses and research strongly suggest the power of the media to influence public perception. However, based on literature reviews, how media exposure and media type correlate with risk perceptions of COVID-19 in the context of the early period of the pandemic in Indonesian society has not been explicitly explained yet. This media type and exposure toward risk perception is a serious investigation theme because 1) studies in other countries showed a strong correlation between media exposure and risk perception, 2) the results of media analysis in Indonesia showed media mechanisms leading public perception to adjust to the pandemic, 3) However, based on observations, many community members are still carrying out everyday activities and are not taking preventive measures to prevent transmission of the virus. Indonesia has the 4th largest population in the world, with accumulated fatalities due to COVID-19 amounting to 6,813,429 people or 12th in the world. (World Health Organization, 2023). Therefore, the initial dynamics of the pandemic, such as the influence of the media and people's risk perceptions, are essential data to serve as references in the future.

Based on the discussion, this research aims to investigate: 1) The description of the public's risk perception toward COVID-19 in the early days of the pandemic. 2) How media exposure correlates with the level of risk perception. In detail, the perception of risk tends to be high for people who regularly follow news developments regarding COVID-19. On the other hand, people who ignore exposure to COVID-19 news tend to show a low-risk perception; 3) the role of the types of media that act as references for the public regarding the level of risk perception they feel.

METHOD

The research applied correlational design, which involved three variables: The type of media used to update COVID-19 news (X1), the frequency of exposure to COVID-19 news (X2) and the public's risk perception of the COVID-19 virus (Y). The research participants reached 1468 Indonesian citizens who used the media to look out for the development of the pandemic. Data was collected online using the Googleform application, which spread to 23 provinces. Generating data by employing online platforms like Googleform has utterly helped because gathering data offline from June to August 2020 would have been challenging due to the social distance policy and virus thread.

The data collection tool involved three instruments: The media type used to update COVID-19 news (X1) consists of a) social media, b) online news platforms, c) television, d) the government's official platform, and e) varied sources. The frequency of exposure to COVID-19 news (X2) comprises of: a) Always (every day), b) Often (2-3 days), c) Sometimes (4-7 days), d) Seldom (more than one week), and e) Never. For the public's risk perception of the COVID-19 virus (Y), this research employed Ropeik's construct of risk perception (Ropeik, 2002). The construct involved 14 indicators: a) fun factor, b) personal impact, c) specificity, d) familiarity, e) uncertainty, f) age affected, g) dread, h) imagination, i) awareness, j) scope, h) nature, i) control, j) origin, k) trust.

The statistical properties of the research were analysed using statistical applications. The validity and reliability test for the risk perception scale was undertaken. The item analysis using Product Moment revealed that from 32 items, 23 items remain valid. The validity scores stretched from 0,178 to 0,666, and the reliability score using Alpha Cronbach reached 0,866. Furthermore, for analysing the correlation between X1-Y and X2-Y, the research performed some formulas in statistical application to get the result.

RESULTS

The research finding contains four points: The statistic descriptive of risk perception, the correlation between media type and risk perception, and the correlation between media exposure and risk perception.

The Descriptive Statistic of Risk Perception

The score of 14 indicators of risk perception, based on the descriptive statistics, is outlined below:

Table 1: Risk Perception Categorization Levels

Very low		X ≤	2936
Low	2936	< X ≤	3915
Moderate	3915	< X ≤	4894
High	4894	< X ≤	5876
Very high	5876	< X	

Table 2: Risk Perception Score All Indicators

Indicators	Score	Mean	Categories
Trust	5311	3,62	High
Origin	6424	4,38	Very high
Control	6642	4,52	Very high
Nature	6230	4,24	Very high
Scope	5217	3,55	High
Awareness	5089	3,47	High
Imagination	5462	3,72	High
Dread	5067	3,45	High
Age affected	6131	4,18	Very high
Uncertainty	5795	3,95	High
Familiarity	5364	3,65	High
Specificity	5696	3,88	High
Personal Impact	5493	3,74	High
Fun Factor	4993	3,40	High
Total Score	5222	3,56	High

From all 1468 respondents, based on Table 2, four indicators (origin, control, nature, and age affected) of risk perception reported very high scores, and 10 other indicators reached high scores (trust, scope, awareness, imagination, dread, uncertainty, familiarity, specificity, personal impact, and fun factor). The total risk perception score revealed that in the early stage of the COVID-19 outbreak, Indonesians were already in a high state. The complete picture of the general distribution level of COVID-19's risk perception is detailed below:

Table 3: General Distribution Level of Risk Perception in Indonesia in The Early Stages of COVID-19

Level categories	Frequency (n = 1468)	Percent (%)	Percent valid (%)	Cumulative Percent (%)
Very low	5	.3	.3	.3
Low	36	2.5	2.5	2.8
Moderate	591	40.3	40.3	43.1
High	808	55.0	55.0	98.1
Very high	28	1.9	1.9	100.0
Total	1468	100.0	100.0	

The correlation between domiciles and risk perception among 23 provinces in Indonesia was analysed using the Chi-Square Test (see Table 4). It resulted in the asymp. sig. value is 1,000. Meaning the asymp. sig. value is more significant than 0.05. Thus, it can be concluded that Ha is rejected, meaning there is no relationship between perceived risk and provinces/domiciles.

Table 4: Chi-Square Tests of Correlation Between Provinces/Domiciles and Risk Perception

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1487,866[a]	1776	1,000
Likelihood Ratio	741,318	1776	1,000
Linear-by-Linear Association	2,963	1	,085
N of Valid Cases	1468		

a. 1825 cells (97,3%) have expected count less than 5. The minimum expected count is ,00.

The Correlation between Media Type and Risk Perception

Based on statistical properties, it disclosed that there is no significant distinction between media type to update the COVID-19 news and the level of risk perception. The analysis is outlined below. Table 5 shows that social media has become the primary source of COVID-19 information. The percentage reaches almost half of the respondents (47.3%), sequentially followed by television, varied sources, online news platforms, and the government's official platform. Marginally, 0.6% of respondents never use media to look for the COVID-19 news.

Table 5: Descriptive Statistics of Media Type to Update The COVID-19 News

	Media type	N	Percent (%)	Media Type Rank
Perceived Risk	Social Media	695	47,3	719,33
	Online News Platform	125	8,5	705,90
	Television	319	21,7	784,97
	Government's Official Platform	28	1,9	684,36
	Varied Sources	292	19,9	741,08
	No Media	9	0,6	456,94
	Total	1468	100	

Table 6: Chi-Square Tests for Correlation Between Media Type and Risk Perception

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	761,126[a]	370	0,000
Likelihood Ratio	347,805	370	0,791
Linear-by-Linear Association	0,512	1	0,474
N of Valid Cases	1468		

a. 350 cells (77,8%) have expected count less than 5. The minimum expected count is ,01.

Furthermore, the chi-square test was set to analyse the correlation between media type and risk perception. Based on the output above, it is brought to light that the asymp. sig. value is 0.000 or, in other words, the asymp sig. value is more significant than 0.05; therefore, it can be concluded that Ha is accepted, meaning there is a relationship between perceived risk and the media used to update information related to COVID-19.

The Correlation between Media Exposure and Risk Perception

According to statistical results, it showed that media exposure has some dynamics to determine risk perception. The investigation is explained below.

Table 7: Statistic Descriptive of Media Exposure And risk Perception

	Categories	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Risk Perception	Always (every day)	495	33,7	33,7	100,0
	Frequently (2-3 days)	494	33,7	33,7	66,3
	Sometimes (4-7 days)	366	24,9	24,9	32,6
	Seldom (more than one week)	97	6,6	6,6	7,7
	Never update	16	1,1	1,1	1,1
	Total	1468	100,0	100,0	

It is shown in Table 7 that the majority of people are exposed to media news about the pandemic in always (33.7%) and frequently (33.7%) categories. Subsequently followed by sometimes, seldom, and never categories.

The correlation between media exposure and risk perception is examined using the Chi-square test in Table 8.

Table 8: Chi-Square Tests of Correlation Between Media Exposure and Risk Perception

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	761,126[a]	370	0,000
Likelihood Ratio	347,805	370	0,791
Linear-by-Linear Association	0,512	1	0,474
N of Valid Cases	1468		

a. 350 cells (77,8%) have expected count less than 5. The minimum expected count is ,01.

Based on the statistical property above, it is known that the asymp. sig. value is 0.000 or, in other words, the asymp. sig. value is more

significant than 0.05; thus, it can be concluded that Ha is accepted, meaning there is a major relationship between perceived risk and the media used to update information related to COVID-19.

DISCUSSION

The result addressed three points: First, it is proved that the risk perception during the initial stage of COVID-19 in the 23 provinces in Indonesia was already at a high level. Furthermore, there is no significant correlation between domicile and risk perception because the level is in high stance in all sampled provinces. In other words, those provinces have no fundamental differences in risk perception. The pace of the COVID-19 news resembled light speed. In a considerably short period, it has spread tremendously worldwide. It confirmed the essay that the news of the outbreak travelled around the world quicker than the virus itself (Depoux, et al., 2020). Regarding that light, the risk perception level was already high despite being in the early stage of the outbreak.

The second result revealed a significant correlation between media type and risk perception. The data showed that almost half of the respondents updated the COVID-19 news through social media and suffered high-risk perceptions. Understand that the results confirmed some preceding writings. The investigation in Italy, for instance, found that the internet and social media were the primary sources to determine the risk perception among higher students in 15 Italian Universities (Carducci, et al., 2019). Align with that finding. It is understood that fear and anger emotion, which are frequently framed in related-pandemic social media contents, arouse vicarious trauma, and are expected to increase the public's risk perception to evoke their preventive behaviour against the virus (Liu & Liu, 2020; Oh, et al, 2021). Other research found that the reliance on the source was one of the issues in the early pandemic outbreak. The flood of information from various sources left their reliance in question. Only in the third wave of the epidemic did people turn to the expert sources (Rui, et al., 2021).

The third result disclosed that exposure to COVID-19 news has an eloquent association with risk perception. As expected, media exposure has a significant role in determining risk perception toward COVID-19 in Indonesia. The finding reported a similar pattern in other countries during the early stage of the outbreak. In Wuhan, China, the epicentre of the epidemic, from January to February 2020, the residents already suffered depression and anxiety because of the way the media exposed the COVID-19 news to their viewers (Gao, et al., 2020). The other finding approved that risk perception served as a pathway through which the exposure to COVID-19 news on media may be pertinent (Olagoke, et al., 2020). However, it is also investigated that social media and geographical proximity determine the height of risk perception. China residents aroused higher risk perception when they know the victim personally or live around the infected one (Liu, et al., 2020). It was massively occurred in February 2020. Furthermore, residents who possess health knowledge also suffer the high level of risk perception (Karasneh, et al., 2021).

The similar level of risk perception in the 23 provinces, the superiority of social media in shaping risk perception among other media types, and the level of media exposure in delivering COVID-19 news in correlation to the risk perception need to be comprehended in a thorough view. In the age of communicative society, the information traffic has risen drastically. With the smartphone becoming a powerful yet handy device, social media emerged as the leading digital tool to channel COVID-related news. People nowadays cannot be separated from their social media activities, especially when COVID-19 broke out in 2020, followed by all physical distance policies. Therefore, it is perceptible that even though the pandemic is still in the early stage, people who are highly exposed COVID-19 news - particularly social media, indicated higher level of risk perception in all provinces.

CONCLUSION AND SUGGESTION

Concisely, the results meet the expectation. The pace of pandemic information travelled around the world resulted in no correlation between domicile and risk perception. Furthermore, people exposed to COVID-19 news from social media indicated higher risk perception than other media. In addition, the risk perception is influenced by the type of media and the exposure frequency of the media. The higher the exposure frequency, the higher the risk perception.

In raising public awareness to prevent the virus infection, the public's risk perception plays a significant role. Without proper understanding, persuading people to do preventive behaviour against any deadly virus is complex. Thus, this is where the media (social media in particular) plays a decisive role in infiltrating people's minds. Hence, this media role and risk perception need further investigation in association with any psychological constructs to insist or resist the preventive behaviour.

REFERENCES

Akhrani, L. A., Kusumaningrum, B. R., Lestari, I. P., & Sudarwati, E. (2022). Masyarakat Madura Perantauan dan Pandemi Covid-19: Uji Model Kepatuhan Protocol Covid-19 melalui Persepsi Resiko Covid-19, Kepercayaan Warga Negara, Locus of Control dan Sikap Anti terhadap Vaksin. Jurnal Ilmu Perilaku, 6(1), 90–112. https://doi.org/10.25077/JIP.6.1.90-112.2022

Alsharawy, A., Spoon, R., Smith, A., & Ball, S. (2021). Gender Differences in Fear and Risk Perception During the COVID-19 Pandemic. Frontiers in Psychology, 12. https://doi.org/10.3389/FPSYG.2021.689467/BIBTEX

APBN 2021 terbukti mampu berikan perlindungan sekaligus pulihkan ekonomi. (2022). https://www.kemenkeu.go.id/informasi-publik/publikasi/berita-utama/APBN-2021-Terbukti-Mampu-Berikan-Perlindungan.

Carducci, A., Fiore, M., Azara, A., Bonaccorsi, G., Bortoletto, M., Caggiano, G., Calamusa, A., De Donno, A., De Giglio, O., Dettori, M., Di Giovanni, P., Di Pietro, A., Facciolà, A., Federigi, I., Grappasonni, I., Izzotti, A., Libralato, G., Lorini, C., Montagna, M. T., . . . Violi, F. (2019). Environment and health: Risk perception and its determinants among Italian university students. Science of the Total Environment, 691, 1162–1172. https://doi.org/10.1016/j.scitotenv.2019.07.201

Cipolletta, S., Andreghetti, G. R., & Mioni, G. (2022). Risk Perception towards COVID-19: A Systematic Review and Qualitative Synthesis. International Journal of Environmental Research and Public Health 2022, Vol. 19, Page 4649, 19(8), 4649. https://doi.org/10.3390/IJERPH19084649

Cnnindonesia.com. (2020). BPKP: Total Dana Penanganan Corona Rp800 T di 2020. Ekonomi. https://www.cnnindonesia.com/ekonomi/20200929155714-532-552319/bpkp-total-dana-penanganan-corona-rp800-t-di-2020

Cori, L., Bianchi, F., Cadum, E., & Anthonj, C. (2020). Risk Perception and COVID-19. International Journal of Environmental Research and Public Health 2020, Vol. 17, Page 3114, 17(9), 3114. https://doi.org/10.3390/IJERPH17093114

COVID-19 Data Explorer. (2023). Our World in Data. https://ourworldindata.org/explorers/coronavirus-data-explorer

Darwin, D., Nurainun, N., Yuliana, Y., Saudah, S., Nazarullah, M., Dewi, C. R., & Juliana, F. (2021). Persepsi Resiko Covid-19 pada Siswa MAN 1 Pidie. Jurnal Sosiologi USK (Media Pemikiran & Aplikasi), 15(2), 217–235. https://doi.org/10.24815/JSU.V15I2.24396

Depoux, A., Martin, S., Karafillakis, E., Preet, R., Wilder-Smith, A., & Larson, H. (2020). The pandemic of social media panic travels faster than the COVID-19 outbreak. Journal of Travel Medicine, 27(3). https://doi.org/10.1093/JTM/TAAA031

Diana, Z., Suroso, & Noviekayati, I. G. A. A. (2021). Hubungan antara Persepsi Risiko COVID-19 dan Self-Efficacy Menghadapi COVID-19 dengan Kepatuhan terhadap Protokol Kesehatan pada Masyarakat Surabaya. Jurnal Ilmiah Psikologi MIND SET, 1(01), 105–116. https://doi.org/10.35814/MINDSET.V1I01.2601

Ding, Y., Du, X., Li, Q., Zhang, M., Zhang, Q., Tan, X., & Liu, Q. (2020). Risk perception of coronavirus disease 2019 (COVID-19) and its related factors among college students in China during quarantine. PLOS ONE, 15(8), e0237626. https://doi.org/10.1371/JOURNAL.PONE.0237626

Dryhurst, S., Schneider, C. R., Kerr, J., Freeman, A. L. J., Recchia, G., Van Der Bles, A. M., Spiegelhalter, D., & Van Der Linden, S. (2022). Risk perceptions of COVID-19 around the world. Journal of Risk Research, 23(7–8), 162–174. https://doi.org/10.4324/9781003316169-15

Fahrimal, Y., Husna, A., Islami, F., Studi Ilmu Komunikasi, P., Teuku Umar Jl Alue Peuyareng, U., Utu, K., & Barat, A. (2020). Media dan Pandemi: Frame tentang Pandemi COVID-19 dalam Media Online di Indonesia (Studi pada Portal Berita Kompas.com dan Detik.com). Jurnal Studi Komunikasi Dan Media, 24(2), 169–186. https://doi.org/10.31445/JSKM.2020.3100

Fatmawati, A., & Hendrayani, S. Y. (2020). THE RISK PERCEPTION OF COVID-19 IN INDONESIA. Jurnal Vokasi Keperawatan (JVK), 3(2), 103–108. https://doi.org/10.33369/JVK.V3I2.11271

Gao, J., Zheng, P., Jia, Y., Chen, H., Mao, Y., Chen, S., Wang, Y., Fu, H., & Dai, J. (2020). Mental health problems and social media exposure during COVID-19 outbreak. PLOS ONE, 15(4), e0231924. https://doi.org/10.1371/journal.pone.0231924

Karasneh, R., Al-Azzam, S., Muflih, S., Soudah, O., Hawamdeh, S., & Khader, Y. (2021). Media's effect on shaping knowledge, awareness risk perceptions and communication practices of pandemic COVID-19 among pharmacists. Research in Social and Administrative Pharmacy, 17(1), 1897–1902. https://doi.org/10.1016/J.SAPHARM.2020.04.027

Kedutaan Besar Republik Indonesia di Brussel merangkap Luksemburg & Uni Eropa Belgia. (2023). Kementerian Luar Negeri Repulik Indonesia. https://kemlu.go.id/brussels/id/news/6349/kebijakan-pemerintah-republik-indonesia-terkait-wabah-covid-19.

Liu, C., & Liu, Y. (2020). Media Exposure and Anxiety during COVID-19: The Mediation Effect of Media Vicarious Traumatization. International Journal of Environmental Research and Public Health, 17(13), 4720. https://doi.org/10.3390/ijerph17134720

Liu, M., Zhang, H., & Huang, H. (2020). Media exposure to COVID-19 information, risk perception, social and geographical proximity, and self-rated anxiety in China. BMC Public Health, 20(1). https://doi.org/10.1186/s12889-020-09761-8

Nanda, R. O., Lolita, L., Indayati, W., Rusdiyanti, I., Nurjannah, Ikhsanudin, A., & Mareti, S. (2021). Covid-19 risk perception among Indonesians in early stage of the outbreak. International Journal of Public Health Science, 10(2), 249–257. https://doi.org/10.11591/ijphs.v10i2.20678

Oh, S. H., Lee, S. Y., & Han, C. (2020). The Effects of Social Media Use on Preventive Behaviors during Infectious Disease Outbreaks: The Mediating Role of Self-relevant Emotions and Public Risk Perception. Health Communication, 36(8), 972–981. https://doi.org/10.1080/10410236.2020.1724639

Olagoke, A., Olagoke, O., & Hughes, A. M. (2020). Exposure to coronavirus news on mainstream media: The role of risk perceptions and depression. British Journal of Health Psychology, 25(4), 865–874. https://doi.org/10.1111/bjhp.12427

Paek, H.-J., & Hove, T. (2017). Risk Perceptions and Risk Characteristics. Oxford Research Encyclopedia of Communication. https://doi.org/10.1093/ACREFORE/9780190228613.013.283

Pinandhita, V. (2021). Vaksinasi Jalan Lambat, Epidemiolog: Masih Banyak yang Anggap COVID Konspirasi. detikHealth. https://health.detik.com/berita-detikhealth/d-5491376/vaksinasi-jalan-lambat-epidemiolog-masih-banyak-yang-anggap-covid-konspirasi.

Rachmawati. (2021, March 2). Satu Tahun Pandemi, Mengingat Kota Tegal yang Pertama Kali Terapkan "Local Lockdown" di Tanah Air Halaman 3 - Kompas.com. KOMPAS.com. https://regional.kompas.com/read/2021/03/02/15590011/satu-tahun-pandemi-mengingat-kota-tegal-yang-pertama-kali-terapkan-local?page=3.

Rinaldi, M. R., & Yuniasanti, R. (2020). Kecemasan pada Masyarakat Saat Masa Pendemi COVID-

19 di Indonesia. In D. haryadi Santoso & A. Santosa (Eds.), COVID-19 dalam Ragam Tinjauan Perspektif (pp. 137–151). MBridge Press.

Rivas, D. R. Z., Jaldin, M. L. L., Canaviri, B. N., Escalante, L. F. P., Fernandez, A. M. C. A., & Ticona, J. P. A. (2021). Social media exposure, risk perception, preventive behaviors and attitudes during the COVID-19 epidemic in La Paz, Bolivia: A cross sectional study. PLOS ONE, 16(1), 1–12. https://doi.org/10.1371/JOURNAL.PONE.0245859

Robbi, D., Ayub, M., & Budi, S. (2022). Analisis Persepsi Risiko Pekerja di Indonesia Indonesian Worker' s Risk Perceptions Analysis of COVID-19. Jurnal Teknik Informatika Dan Sistem Informasi, 8(2), 454–473. https://doi.org/10.28932/jutisi.v8i2.5056 Riwayat

Ropeik, D. (2002). Understanding factors of risk perception. In Nieman Reports (Vol. 56, Issue 4, p. 52). https://www.proquest.com/openview/5324403d3495c447bdf3f1e6f1e6dcd7/1?pq-origsite=gscholar&cbl=48335%0Ahttp://ezproxy.cardiffmet.ac.uk/login?url=https://www.proquest.com/scholarly-journals/understanding-factors-risk-perception/docview/216751501/se-2?accoun

Rosfiantika, E., Fakultas Ilmu Komunikasi, Ms., Padjadjaran Jalan Raya Bandung-Sumedang, U. K., Saptya Mohamad Permana, R., & Narotama Mahameruaji, J. (2020). Program live update pemberitaan risiko Covid-19 di televisi nasional Indonesia. ProTVF, 4(2), 247–269. https://doi.org/10.24198/PTVF.V4I2.28758

Rui, J. R., Yang, K., & Chen, J. (2021). Information Sources, Risk Perception, and Efficacy Appraisal's Prediction of engagement in protective behaviors against COVID-19 in China: Repeated cross-sectional survey. JMIR Human Factors, 8(1), e23232. https://doi.org/10.2196/23232

Siswati, T., Benita, S., Paramita, I., Susilo, J., Waris, L., & Paramashanti, B. A. (2021). Risk perception of behavioural adaptation recommendations towards COVID-19 and its related factors in Indonesia. International Journal Of Community Medicine And Public Health, 8(11), 5157. https://doi.org/10.18203/2394-6040.ijcmph20214243

Syambudi, I., & Amali, Z. (2020, March 27). Lockdown Mandiri ala Jogja: Ditolak Pemerintah, Diinginkan Warga. tirto.id. https://tirto.id/lockdown-mandiri-ala-jogja-ditolak-pemerintah-diinginkan-warga-eH3o.

Tanjung, C. A. (2020). Pemkot Pekanbaru: Kecewa, Masyarakat Cuek terhadap Kondisi Corona. Detiknews. https://news.detik.com/berita/d-5195249/pemkot-pekanbaru-kecewa-masyarakat-cuek-terhadap-kondisi-corona.

Tejamaya, M., Widanarko, B., Erwandi, D., Putri, A. A., Sunarno, S. D. A. M., Wirawan, I. M. A., Kurniawan, B., & Thamrin, Y. (2021). Risk Perception of COVID-19 in Indonesia During the First Stage of the Pandemic. Frontiers in Public Health, 9, 731459. https://doi.org/10.3389/FPUBH.2021.731459/BIBTEX

WHO Coronavirus (COVID-19) dashboard with vaccination data. (2023). https://covid19.who.int/table.

Yusfarani, D. (2021). Hubungan Kecemasan dengan Kecendrungan Psikosomatis Remaja Pada Pandemi Covid 19 Di Kota Palembang. Jurnal Ilmiah Universitas Batanghari Jambi, 21(1), 295–298. https://doi.org/10.33087/JIUBJ.V21I1.1328

Zanin, G. M., Gentile, E., Parisi, A., & Spasiano, D. (2020). A Preliminary Evaluation of the Public Risk Perception Related to the COVID-19 Health Emergency in Italy. International Journal of Environmental Research and Public Health, 17(9), 3024. https://doi.org/10.3390/IJERPH17093024