Indonesian's Risk Perception of COVID-19 Pandemic: A Netnography Analysis of Kawalcovid19.id Instagram

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Abstract. Kawalcovid19.id is a virtual community that engages in proper risk communication amid health crises pandemics COVID-19 in Indonesia. During pandemics, social media has a significant role in people's life by keeping them connected to others to share thoughts, feelings, and experiences. This study aims to investigate the risk perception of Indonesian through comments on Kawalcovid19.id's Instagram posts. This netnography study was conducted on ten posts of Kawalcovid19.id in March, June, September 2020, and January 2021 to explore netizens' judgments about the likelihood of negative occurrences of COVID-19. The results show that there are three risk judgments; (1) apprehension to the pandemic, (2) downplaying the risk related to the pandemic, (3) risk-tolerant. First, people who feel threatened and vulnerable to the virus thereby adopt the health protocols. Second, those who underestimate the risks. Third, are those who believe in being able to handle the risks.

Keywords: COVID-19, risk communication, risk perception, netnography, virtual community

1 Introduction

The number of cases of COVID-19 in Indonesia continues to increase with the number of deaths reaching 28 thousand people as of January 26, 2021. Although the number of cases continues to increase, there are still people who are not aware of the high risk of transmission of the virus and its serious impact on their health by carrying out risky behaviours such as inconsistently implementing recommended health protocols [1]. This weak public emergency response attitude can be caused by their knowledge factors related to COVID-19 that are not adequate. Misinformation about the origin of the virus, the dangers of the virus, and the way the virus has spread has been widely circulated, especially on social media since the pandemic occurred, causing real harm to health, public trust, and public emergency response because it will make it difficult for them to make the right decisions for their health [2, 3]. Risk communication can help raise awareness and encourage protective behaviour by building knowledge about hazards and risks and promoting risk acceptance as well as risk management measures that can be taken. Risk communication is the real-time exchange of information, advice, and opinions between

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experts and the public covering the various communication capacities necessary to go through the phases of preparedness, response, and recovery of serious public health events to encourage informed decision-making, positive behavior change, and trust maintenance [3, 4]. The success of risk communication will have an impact on the high public risk perception of COVID-19 disease and help reduce the number of infected cases and death tolls [1]. Risk perception refers to people's subjective judgments about the likelihood of negative occurrences such as injury, illness, disease, and death [5]. Risk perception is important in risk communication because it determines how danger is cared for and faced by a person. How a person thinks and feels the risks they face is an important determinant of protective behavior [6].

In Indonesia, a group of experts and practitioners in the fields of health, mass communication, and technology formed the first digital community that engages in proper risk communication to the public. This community is engaged through social media named *Kawalcovid19.id* and has started its activities since the first case of COVID-19 in Indonesia occurred in March 2020. As a means of interface communication, social media is used to share important information and express one's thoughts and feelings about risk, as well as share what is experienced, seen, and heard to others broadly [7]. It's interesting to see how the perception of risks the wider community through the use of social media. Perception-related research can be explored from the extraction of their experience by analyzing opinions in virtual conversations and gaining contextual understanding [8, 9].

Various studies on public risk perception of COVID-19 have been conducted using a massive and measurable approach [10, 11, 12]. However, they pay little attention to a deep understanding of contextual experiences and meanings related to COVID-19. The significant global impact of COVID-19 highlights the importance of considering the context in which people deal directly with pandemics and the implementation of policy measures and related outcomes largely depend on the context [13, 14]. Qualitative research is well suited to explore, describe, and explain how changes in policies and practice during the pandemic could be adapted and implemented while addressing healthcare professionals' and patients' voices regarding their needs, concerns, and preferences [15]. Besides, qualitative research such as netnography can help the researcher to explore people's expression and their unique and complex experiences such as dealing with job loss, isolation, anxiety, physical and mental illness, lack of or reduced support, and caring for family members [16]. It can also provide insight into how individuals and groups perceive and deal with these changes, and better inform a unique and targeted approach to mitigate the negative impacts on society [17, 18]. Moreover, a recent paper highlights the crucial contribution of qualitative data in informing evidence-based public health responses and suggests that it is possible and necessary, albeit with some modifications, to address certain challenges that arise [18]. Efforts toward understanding individual and group experiences during the pandemic are warranted to tailor local policy development and implementation [14].

Based on this explanation, this study aims to explore the perception of public risk in Indonesia to COVID-19 through their virtual conversations on Instagram *Kawalcovid19.id* during the initial period and period of a spike in cases in Indonesia. The selection of Instagram as a research object is based on the popularity of the platform among Indonesians, especially young people. Then, the novelty of the study lies in research methods that apply qualitative research approaches to assessing public risk perception during the COVID-19 pandemic.

2 Method

This study uses the netnography method. Netnography is a qualitative assessment that studies the unique habits of different communities and cultures in computer-mediated communication [19]. Netnography can see the reality of the virtual world by revealing the cyberculture produced and the meaning that arises where online experiences have connections to offline experiences [20]. Netnography helps researchers gain communicative understanding through the thought process of netizens by mapping people's comments on social media and connecting them to contextual environments [8]. The netnography research flow is carried out through six stages namely research planning, entrée, data collection, interpretation, ensuring ethical considerations, and finally invention of findings (presenting the result) [19]:

2.1 Research planning

At this stage, researchers choose a relevant digital community with a research focus and research questions, active and interactive, substantial, heterogeneous, and data-rich. The first digital community in Indonesia to practice risk communication is *Kawalcovid19.id* and they are active in various social media providing education to the public through their content and interaction with netizens and have a large and diverse followers.

2.2 Entrée

Choosing Instagram *kawalcovid19.id* for the netnography environment in observing textual and visual data online because of the popularity of this platform among Indonesians, especially young people, and its visual-centric nature to improve attention, understanding, and memory-related to health information. Instagram *kawalcovid19.id* has been active since March 3, 2020, and has 224 thousands followers as of November 13, 2020.

2.3 Data collection

Instagram *data kawalcovid19.id* collected using Phyton programming application *Instascrape* and online observation. Data collection is carried out on content from March 2020 to January 2021 with the results of caption data, *tags, taken_at_timestamp, id_comment, created_at, id_owner, username, text*. The data collected 1,178 posts with 106,538 comments. This study then processed ten posts selected based on the urgency of content amid social phenomena in Indonesia at the time concerned and engagement of posts. Four posts were taken in March 2020 because at that time Indonesia experienced the first case of COVID-19 and began to impose a physical distancing and partial lockdown policy. One post was taken in June 2020 because at that time Indonesia began to impose a New Habit Adaptation policy (*New Normal*). Four posts were taken in September 2020 because at that time Indonesia experienced the first spike in cases due to COVID-19. Then, one post in January 2021 because at that time Indonesia experienced a surge in a *positive rate* that reached 29.5% and had received special world attention. The ten contents had a total of 1022 comments analyzed to gain an understanding of people's risk perceptions in the period.

2.4 Interpretation

This study took a qualitative analysis approach consisting of cyclical activity i.e. data collection, data condensation, data display, and conclusions [21]. Analysis of risk perception on community comments using the concept of the Health Belief Model which is one of the models of behavior

change [5]. This model assumes that people want to avoid disease and will adopt behaviors that they believe will protect them from disease. The model identifies two risk perception domains as determinants of health behavior: perceived susceptibility and perceived severity. In addition to using the model, researchers also used reference risk perception domain keywords [22].

Perceived Susceptibility (CHV Ontology ID)	**Perceived Severity** (CHV Ontology ID)	**Negative Emotion** (CHV Ontology ID)
Vulnerable/vulnerate	Die	Worse/worthen/worthening
Risk/risky	Dead/death	Worthened/worst
Unsafe/not safe (ochv#37555)	Lethal	Dread
Suspect	Fatal	Fear/feared/fearful/fearing
Doubt/dubious	Pain/painful	(ochv#37463)
Hesitate/hesitating	(ochv#9185)	Scare/scared/scaring
Danger/dangerous	Isolate	(ochv#51823)
Unsure	Judge	Outrage
Believe/believed	Shame/shameful	Nervous
Undoubted/undoubting	Suffer/suffering/suffered	Panic
Confused/confusing/confusion	Paralyzed	Terrify/terrified/terrifying
Immune /immunity	Restricted	Worry/worried
High risk/ high-risk		Anxious/anxiety
At risk/ at-risk		Stress/stressed
Avoid		Distrust
Cancel		
Postpone		

Fig. 1. Risk perception domain keywords

2.5 Ensuring ethical considerations

Researchers revealed the existence and purpose of the research to the community, using virtual data that can be accessed by the public, and maintaining the confidentiality of the identity of the citizens used.

3 Result and discussion

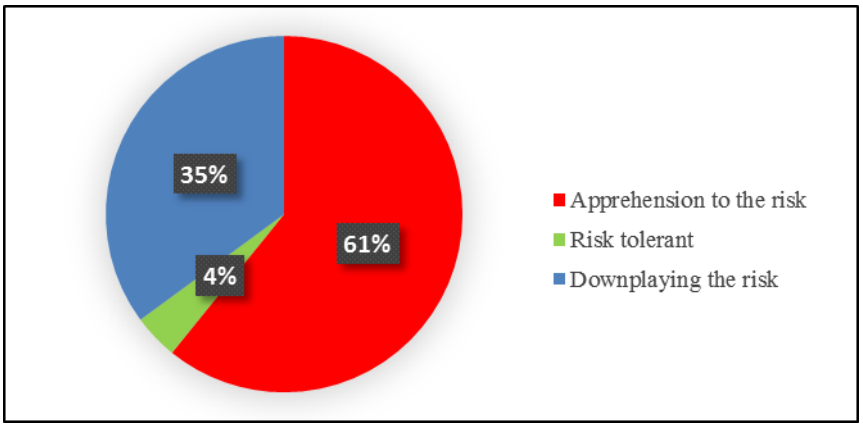

Fig. 2. Diagram of risk perception of netizens

The effectiveness of risk communication will have an impact on the high perception of public risk to COVID-19 disease that is threatening health and helps reduce the number of confirmed cases and fatalities [1]. In the health crisis of the COVID-19 pandemic, people are expected to have a high perception of risk to encourage them to adopt preventive behaviors with the

discipline of implementing health protocols (wearing masks, washing hands with soap, maintaining distance, reducing mobility, staying away from crowds). Risk perception is significantly correlated with self-reported public health compliance in ten countries in Europe, the Americas, and Asia [10]. Although risk perception acts as a trigger for preventive measures, involvement in preventive health behaviors is not only determined by an awareness of objective health risks but also influenced by certain health beliefs and health cognition [23, 24].

3.1 Apprehension to the pandemic

This category describes the public's judgment of the perceived vulnerability of the risk of contracting COVID-19 and the serious health impacts caused by the disease. The study found that some people have adopted preventive behaviors such as maintaining *physical distancing,* wearing masks, and reducing mobility. This is found in the narrative of sharing experiences and expressions of emotion in comments. The use of the hashtags *#stayathome, #staysafe, #masks4all, #behealthy,* and *#againtscorona,* accompanies the content of comments that can be interpreted as an expression of invitation and reminding to adopt such behavior.

> *"I have comorbid and trying to stay at home to adhere to health protocols, I am sad and often reprimand people who do not adhere to health protocols, they used masks on the chin, exercise in groups, and eat together while chatting and removing masks..they messed up □□□□" ....(1)*

> *"My heart was broken when I voiced to the people who live in Jakarta and big cities not to go home, it turns out that my brother from Sukabumi suddenly returned home without a health check first □□, pity my sick mother.. May she always be healthy □" ....(2)*

> *"If all healthy or sick people, who are at home or out of the house all use masks, I believe the spread of this disease can be suppressed. Because the majority of transmission is sourced from the mouth."…..(3)*

The comments footage above shows contextual matter like psychosocial factors that affect a person's risk perception of COVID-19. Psychosocial factors such as the locus of control affect how individuals feel concerned about the possible impact of COVID-19 on their health [25]. In the first comment, the individual feels threatened and vulnerable to COVID-19 due to the presence of congenital disease factors suffered which can aggravate the possibility of the impact of COVID-19 on health. This gives her an internal locus of control to behave protectively towards her and feels very disturbed by others who ignore health protocols. Then another psychosocial factor is the state of residence and unplanned events, as the second comment snippet. Individual feels particularly disturbed by the behavior of family members who are indifferent to the risk of transmitting the virus to other vulnerable family members even though they live in a region with high rates of COVID-19 transmission cases. The low participation of fellow family members in carrying out protective or anticipatory behavior against the possible risk of COVID-19 transmission becomes a psychosocial factor that makes a person feel more vulnerable and threatened with this disease.

Subsequently, the word cloud comments in this category (figure 3) shows the word "mask" has the largest size followed by the word "covid". The word "covid" which appears with a letter size that is close to the size of the letter that forms the word "mask" can be interpreted that to avoid exposure to COVID-19 amid this pandemic should carry out protective behavior by always

using a mask. Protective behaviors such as reducing mobility by staying at home, and the serious effects of the disease that can result in death also arise by forming a sizable letter size in the form of the word "home", and negative words such as "sick" and "dead".

Fig. 3. Word cloud comments of apprehension to the pandemic

Risk perception is positively correlated with the application of protective health behaviors such as wearing masks or maintaining social distance [26]. People who feel vulnerable to pandemics, and greater perceived disease severity, tend to increase the likelihood of preventive or avoidance behaviors [27]. People's personal experiences with viruses, individualistic and prosocial values, trust in government, science, and medical professionals, and a sense of personal and collective efficacy are the most important predictors of people's holistic perception of COVID-19 risk. Risk perception is a subjective appraiser that people regard characteristics, severity, the way risk is managed, where the key elements are outrage and indignation posed by those risks that multiply anxiety and quickly spread throughout society [28].

3.2 Downplaying the risk related to the pandemic

This category describes distrust of the dangers of COVID-19, downplay its severity or infectiousness, or even questioning its existence. Their comments show negative sentiments toward education that were given by *kawalcovid19.id* on its posts. Their comments are around mocking, excuse, wrong belief, doubting, cynical, reproach, and complain.

"What's not safe is that staying at home continuously can go crazy"....(4)

"I'm aching because over time just napping □ #stayathome".....(5)

"It is not a problem to be affected by COVID-19 because the chances of recovery are higher, I no longer care about COVID-19, anyway this virus is not as dangerous as reported by the media".....(6)

"It can heal and a week later the virus will disappear and everything is healthy again."".....(7)

"Can you see it with the naked eye if the virus is not controlled?".....(8)

Those comments showed that the severity of COVID-19's health impact was not felt by them, and they were disturbed by rules to reduce mobility and stay home. The comments point to a

misrepresception that the COVID-19 virus can soon disappear, is harmless, and casts doubt on the high rate of transmission of the virus. This result was reinforced by a survey conducted in two major cities in Indonesia, Jakarta and Surabaya, which found that people there especially young people feel confident that their chances of contracting COVID-19 are very small, they declare themselves very unlikely to contract the coronavirus, as well as their compliance levels carrying out health protocols, are very low [29, 30, 31]. Furthermore, the word cloud in this category showed that the widely used words are 'community', 'covid', and 'government' (Figure 4). The context in this category is related to people's judgement of governments during this pandemic. Expressions of distrust, anger, cynics, and reproach appeared coloring their attitude claims during the pandemic. The word "community" which is the largest here can be interpreted as a picture that the community is a 'victim' of the government and its policies during this pandemic.

"People don't obey, the government fails!!! The problem of strict social restrictions is still not mutually supportive between the central and regional governments, what do they want? Left to death all? If this is the case, should not the government be flame? Ask me, what the hell can be considered from the current government? Achieving 4000s positive covid per day?".....(9)

"Reality: Many policies are biased, many are vague and indecisive policies. The infographics provided contain different messages. Moreover, the rules or conditions for boarding an airplane, rapid test, PCR, those letters. More expensive is the cost of fulfilling the requirements than the price of the plane ticket. While sea transportation, land and rail there is no requirement for passengers, smoothly there is no prohibition"....(10)

"Society is blamed constantly: not obeying protocol. From the very beginning, people were not given an atmosphere of crisis by the government."....(11)

The government has made recommendations in preventive measures given that not much information is known about the SARS-CoV-2 virus. So the recommendations of actions such as wearing masks, reducing mobility (travel restrictions), using hand sanitizer, testing, and tracking, self-isolation at home, become some measures that can be done to prevent the risk of transmission of this virus [27]. While the person who invites to refute or oppose the recommendation can be qualified as a dangerous message caused by a belief in false information.

Fig. 4. Word cloud comments of downplaying the risk

3.3 Risk tolerant

This category illustrates the change in the level of fear and alertness against COVID-19 in the early phases of the pandemic and new normal. People in this category believe that excessive fear will lower the body's immunity so that they hate the news that scares. This category shows confidence not to be afraid, should not think negatively, should not be stressed, and should always be happy and positive, without underestimating COVID-19 while still running health protocols. People believe that they should take the positive side from the pandemic by only looking at positive information such as COVID-19 can be cured, how COVID-19 handlers, and not blaming the government. Those are shows in the word cloud in Figure 5 where the largest word sizes are 'covid' followed by the words 'happy', 'should', and "laugh". People feel able to control COVID-19, no need to be afraid of the disease, and continue to live activities as usual and stay happy, while still running health protocols.

> *"Happiness can not prevent the virus from entering our bodies, but happiness/sadness affects metabolism (including a person's immunity). There is research on the psychic influence on cancer. It's just that it is still not permissible to underestimate health protocols because no matter how strong our immunity is if continuously exposed to the virus can still fall. Our body's defenses also have limits. So, health protocols, healthy lifestyles, and healthy minds should go all the way."……(12)*

There is a significant, albeit small, positive correlation between confirmed cases of COVID-19 and people's reported level of risk perception [26]. The perception of risk did not increase or increase relatively small even though cases increased sharply over time during pandemics. This is in line with the phenomenon in Indonesia, wherein in September 2020, COVID-19 cases increased sharply to reach 100 thousand cases in just under a month after the long holiday of Independence Day [32]. At that time many people who do holiday activities are crowded in public places spend time with family and closest friends, although some of them use masks, preventive behaviors such as maintaining distance and staying away from crowds are not carried out. After the phenomenon, Indonesia again undergoes several long national holidays, and every time a long vacation occurs, cases in Indonesia always increase sharply. Psychological factors are more predictive of risk perception than objective measures of situational severity, i.e. the number of confirmed cases of COVID-19. It can be interpreted that although individuals know the number of confirmed cases of COVID-19 is increasing sharply if the individual or person closest to the individual has never experienced health problems due to COVID-19, then he will tend to assess the situation of the COVID-19 pandemic is not severe.

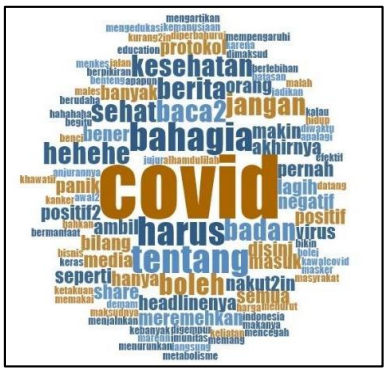

Fig. 5. Word cloud comments of risk-tolerant

4 Conclusion

Risk communication messages created by *kawalcovid19.id* through their Instagram content are done appropriately and fill the current information needs or urgency of risk communication messages that the public needs at the time. Risk communication is adjusted to the risk communication strategies recommended by experts and the Ministry of Health. This community risk communication appears to be successful when viewed from the results of analysis of comments of the netizens involved who showed their high perception of risk to the threat of the COVID-19 pandemic. Through this research can be obtained an overview of how to create the right risk communication message amid health crises such as pandemics through virtual communities. Then, this study can also provide an overview of how the concept of measuring public risk perception to the COVID-19 pandemic through the study of analysis of comments of netizens in virtual communities.

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