

COPING NARRATION THROUGH THE PANDEMIC: X (EX-TWITTER) ANALYSES OF PSYCHOSOCIAL RESPONSES TOWARDS THE IMPACT OF COVID-19 AMONG INDONESIANS

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Abstract

This study utilized Twitter data to examine narratives related to psychosocial responses to the impacts of COVID-19 among Indonesians, which were further discussed in the context of coping strategies. We collected and analyzed tweets containing coping-related trending hashtags, namely #Covid-19, #coronavirus, #lockdown, #dirumahsaja (stay at home), #newnormal, #pakaimasker (wear a mask), #amandirumah (safe at home), #vaksin (vaccine), #ppkm (referring to the micro-lockdown term), #coping, and the keyword "mental health." A total of 24,502 tweets were collected from three distinct periods: the Early COVID-19 Emergency Responses Phase, the New Habit Adaptation Phase, and the Early Mass Vaccination Phase, using a Python-based library. After filtering out duplicate and irrelevant tweets, a total of 6,265 tweets were subjected to deductive content analysis procedures. This study found that Indonesian Twitter users more often tweeted narration related to problem-focused coping strategies during the three periods of COVID-19 in Indonesia, followed by seeking social support in the first and the third periods, while cognitive coping was the second most strategy in the second period. Informational sharing, problem-solving strategies, and criticism were the three most forms of problem-focused coping strategy. Calls or appeals and social support seeking was the most form of social coping strategies. The forms of cognitive coping were finding meaning or reflection, views, and optimism. This study implies the exploration of the speech-act psychology, the intersection of psychology, communication, and even technology to understand how individuals and communities adapt to crises. The findings also inform public health communication strategies, social media governance, and mental health interventions aimed at mitigating the impacts of crises.

INTRODUCTION

Novel Coronavirus 2019 (COVID-19) was declared as a pandemic on March 11, 2020, by World Health Organization (Cucinotta & Vanelli, 2020). This situation has prompted many countries to start

implementing restrictions on social activities and urging people to stay at home and avoid intense physical contact. As with previous pandemics, the COVID-19 pandemic also impacts various aspects of human life. Some of the typical effects are

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the stress perceived by the community, the impact on the health care system, and the economic burden (Taylor, 2022). Although the crisis concluded approximately three years ago, its effects remain perceptible to this day.

The psychological aspect is one aspect significantly affected by the COVID-19 pandemic. Anxiety and fear were becoming more common in response to a perceived threatening pandemic (Bavel et al., 2020; Taylor, 2022). Previous research has shown that symptoms of anxiety and depression (16 – 18%) and stress were reported to be more salient as a psychological response to the COVID-19 pandemic (Dar et al., 2017; Rajkumar, 2020) and associated with disturbed sleep (Rajkumar, 2020). A nationwide study in China also showed that about 112 million people (8.1%) reported moderate to severe stress (Wang et al., 2020). The isolation caused psychological problems such as panic disorder, anxiety, and depression (Qiu et al., 2020). In Indonesia, research also showed several impacts of COVID-19 on mental health, such as anxiety (e.g., anxiety about their health status), fears (i.e., the fear of meeting other people, the fear of death, and the fear of isolation), lonely, insomnia, panic and psychosomatic, and the stigma process (Pragholapati, 2020).

In response to problems or psychological distress, individuals apply coping strategies. Several studies described coping strategies during the Pandemic situation. In the previous pandemics, familiar coping strategies adopted in response to psychological distress were problem-focused coping, which was an active effort to manage the stressful condition by engaging in problem-focused efforts to alter the situation or seeking alternatives (Stanisławski, 2019); seeking social support; and, positive appraisal in which people construed the stressful situation in favorable light (Chew et al., 2020; Stanisławski, 2019). During COVID-19 Pandemic, Gurvich et al., (2021) found that, among Australians, some coping strategies were associated with better mental health, including positive reframing, acceptance, and humor. Conversely, self-blaming, venting, behavioral disengagement, and self-distraction were associated with poorer mental health. Garfin (2020) suggested that technology utilization becomes a form of coping during the COVID-19 Pandemic. Accordingly, coping mechanisms may be adapted to respond to the psychological impact of the COVID-19 Pandemic

Understanding the people's efforts to overcome the Pandemic's effects is essential through coping strategies. Psychological

conditions can affect physical health conditions. When people are sick, they cannot perform their jobs, thus affecting essential services on a larger scale (Shultz et al., 2015). In turn, this condition can impact other aspects, including the economic burden, thus it can indirectly become a problem for the country in dealing with the COVID-19 Pandemic. Therefore, coping strategies are needed by people to remain productive and prevent them from experiencing more severe psychological issues, and the community can still maintain their welfare in various aspects.

Social Media Research

It is widely known that surveys are a popular method used to measure a societal phenomenon, including opinions, perceptions, and responses to the COVID-19 Pandemic. However, this can take longer and incur more costs (Chew & Eysenbach, 2010). Therefore, one method of data collection that is considered efficient is social media data. Social media data, including text and images, is part of big data. The enormous volume of data and the wide variety of behaviors captured in the data provide opportunities for psychological researchers to conduct naturalistic field research. With the increase in social media use during this Pandemic, the possibility of

variety and velocity of social media data would also increase.

One exciting development for researchers interested in social media is the emergence of X, formerly known as Twitter. X was included in the top 10 social media platforms that were often used and had active users every month (Search Engine Journal, 2022). According to data from Datareportal.com about Active User Index of various social media platforms, measured by the number of smartphone users who accessed each platform's mobile app in August 2024, X index was 22.3, indicating that it ranks 9th among the listed platforms in terms of active smartphone users (Kamp, 2024). It also showed that X/Twitter remains a relevant social media platform globally. Indonesia was the fourth country with the most Twitter users as of April 2024, approximately 24.85 million users (Monavia, 2024). Besides, Twitter is the sixth most used social media platform in Indonesia as of January 2024, in which WhatsApp occupies the first position (Inilah.com, 2024). In addition to the popular platform, some of the advantages of X are fast, easy, and free communication due to the character limit in the upload. X/Twitter's relationship model also allows users to follow the latest developments from other users, even though that other user may not choose to follow the user back

or even not know that the user exists. Thus, the network model is simple but exploits a fundamental aspect of human need, the curiosity about various topics (Murphy, 2017; Russell & Klassen, 2019). Besides, X is considered the most effective media for sharing real-time information among all social media platforms (Palen et al., 2009; Merchant et al., 2011). Therefore, X is a promising rich source of data for social research.

A survey conducted by the Reuters Institute in 2023 also highlighted the potential of data from X users to provide valuable insights into specific social issues. Active users of X were notably recognized for their intellectual reputation, surpassing users of other social media platforms, particularly TikTok. Approximately 49% of X users have a higher educational background, positioning the platform as a conducive medium for discussing more serious topics, such as politics, news, or public opinion. This environment contributes to the intellectual refinement of its users (Lubis, 2023).

In terms of the COVID-19 Pandemic, a previous study revealed that most X/Twitter users shared positive opinions about the lockdown during the lockdown period. The results also showed that people are keeping themselves engaged and entertained despite the hardships faced by them. The study also

found several users expressing negative sentiments. Furthermore, the study suggested that X users' opinions and emotions could swing either way depending on how the Pandemic progresses and what kind of action is taken by governments worldwide (Mittal et al., 2021). Hence, it is also essential to consider the specific periods within the Pandemic.

The Current Study

How people respond to stressful situations during the COVID-19 pandemic was the focus of this research. Few studies in Indonesia have focused on patterns of community psychosocial responses related to the COVID-19 pandemic which explore data from social media X. Previous research using data from X social media had focused a lot on opinion analysis related to specific hashtags (Alkatiri et al., 2020) and sentiment analysis on certain discourses whose primary focus was not on psychological aspects (Anggelia & Syaifudin, 2021; Rakhman et al., 2021; Rinaldi et al., 2021). Therefore, this research aimed to examine emerging themes related to the pattern of psychological and social responses which were considered as coping styles that Indonesian people tweeted. It is important to note that researchers did not examine the form of observable behavior since we used the twitter data. Otherwise, researcher

examined the tweets as the reflection of the responses or behaviors, leading to the use of 'narration' term. The results of this study might provide an understanding of psychological responses in social media, especially the pattern of community coping strategies in the context of a crisis, such as Pandemic. Since researchers analyzed the narration of tweets, this study can contribute further to the development of the speech-act psychology concept that gives an understanding about the dynamic of speeches and psychological meaning behind them.

REVIEW LITERATURE

Methodology

This research was qualitative and quantitative (mixed-method) research examining the Twitter dataset. This study employed a deductive approach in content analysis and incorporates quantification to determine the percentage of the most frequently occurring themes. The researcher also focused on the subjective interpretation of tweets, contextual understanding and flexibility to construct categories, which were subsequently directed toward the predefined themes, while still maintaining the objectivity, applying quantification and trying to generalize the results. Researchers were more inclined to the pragmatism as main paradigm, that supports the use of

mixed methods to achieve practical and relevant research objectives (Creswell, 2014).

Data Collection

Researchers collected the data using two types of different and free python-based programs: *request* and *sns scrape*. *Request* library allows researchers to send HTTP requests using Python, which returns a Response Object with all the response data (content, encoding, status, etc.). *Sns scrape* is a scraper for social networking services (SNS) scraping things like user profiles, hashtags, or searches and returns the discovered items (e.g., relevant posts). Jupyter notebook and google collab were used differently as code editors for running the function for scraping the tweets. Since researcher utilized data from social media, ethical matters could be questioned. Basically, when users create an account, they have agreed to the applicable conditions including allowing the shared content to be used by third parties, including big data researchers. In addition, data that can be accessed by third parties is data that the user has authorized to access (Bonzanini, 2016; Hewson et al., 2013).

To filter the Twitter data, keywords and hashtags will be used which may contain the possibility of emerging themes related to coping strategies during the COVID-19 Pandemic. The hashtag is a

phrase that begins with a hash symbol (#) followed by a combination of characters (whether it has a clear meaning or not). In practice, hashtags and keywords make it easier to find messages with a specific purpose, theme, or content (Salazar, 2017). The most popular (trending) hashtags in Indonesia related to the COVID-19 pandemic (as of June 2021) were used as follows: *#Covid-19*, *#coronavirus*, *#lockdown*, *#stayhome*, *#newnormal*, *#pakaimasker* (wear a mask), *#amandirumah* (safe at home), *#vaksin* (vaccine), *#dirumahsaja* (stay at home), *#ppkm* (refers to micro-lockdown term), and *#coping*. We also employed the keyword “*kesehatan mental*” (mental health) to specify the tweets containing coping strategy toward stress or other mental health issues related to the COVID-19 Pandemic. Moreover, researcher added the keyword “Indonesia” after the hashtags and keywords previously described to make sure that the tweet would be in Bahasa Indonesia and tweeted by Indonesian users.

The data collection was conducted gradually during September 2021. The tweets taken were divided into three periods based on the developments of the COVID-19 Pandemic in Indonesia decided by researchers after considering government responses and policies related to COVID-19. The period included: (1) Period 1 (early

emergency phase of the COVID-19 Pandemic): March – June 2020 (2) Period 2 (after the introduction of the “New Normal” phase): September–December 2020; (3) Period 3 (Second wave phase and massive vaccination): April – July 2021.

Tweets retrieval from two different programs resulted in as many as 24.502 tweets. After removing the duplicated tweet, a total of 12.149 tweets were left. Subsequently, 5884 tweets containing information not associated with the research topic (coping) were categorized as irrelevant, for example, advertisement, promotion, uncompleted tweets, tweets only containing hashtags and mentioning usernames, and tweets using other than Bahasa Indonesia. Therefore, the total of tweets included in the main themes was 6.265, or 52% of the total number of tweets analyzed.

Data Cleaning and Pre-Processing.

The format of Twitter data obtained was json and csv, making semi-structured data in which the structure is either flexible or not fully predefined (Bonzanini, 2016). Therefore, the data cleaning stage is important before entering the analysis stage. Data cleaning is included in a series of data processing, a bridge between data collection and data analysis (Chen & Wojcik, 2016). During this process, there will be a

'cleaning' process from unnecessary elements attached to the data.

Manual cleaning was performed by researchers to eliminate unnecessary elements of the tweet structure, such as, "id", "truncated", "display_text_range", "entities", "source", "in_reply_to_status_id", "in_reply_to_screen_name", "user_id", "geo", "coordinates", "place", "contributors", "is_quote_status", "retweet_count", "favorite_count", "reply_count", "quote_count", "conversation_id", "favorited", "retweeted". The data cleaning process only left "created_at," which is the date or time the tweet was created, and "full_text," which is the tweet's content. Most importantly, this cleaning process also includes deleting duplicate tweets.

Data Analysis

The data that had been cleaned were then analyzed further using deductive content analysis as suggested by Elo and Kyngäs (2008). Content analysis is a research method used for systematically analyzing text data to interpret meaning from its context. This process can involve both qualitative and quantitative elements. While qualitative element focuses on identifying themes or categories to understand meaning, quantitative element focuses on counting the frequency of

specific words, themes, or categories (Elo & Kyngäs, 2008). This content analysis is also often applied to retest existing data in a new context (Catanzaro, 1988) and may involve testing categories, concepts, models, or hypotheses (Creswell, 2013). Researcher viewed the coping strategy as a reasonably well-established concept that has been widely studied, thus, the deductive technique is chosen. Researchers then intended to examine this concept in the context of the COVID-19 pandemic. Folkman and Moskowitz (2004) proposed four major coping strategies as a preliminary coding guide, including problem-focused, emotional-focused, meaning, and seeking social support.

Researchers began the analysis by preparing the tweets dataset and familiarizing themselves with the data to gain an initial understanding of the content and context. Then, the researchers reviewed the conceptual framework related to coping strategies and then determined operational definitions for each pre-defined theme. A coding matrix or categorization framework was developed based on the predefined theme. Three researchers separately conducted open coding, defined emerging sub-categories and categories, and classified the categories into pre-defined themes. As previously explained, although researchers used deductive content analysis

with predefined themes, we were still ensuring flexibility and maintaining a qualitative focus by using inductive processes during categorization (Fife & Gossner, 2024). All cleaned datasets had been analysed for around one month. Reviewing and refining were conducted through discussion to accommodate new insights or nuances from the data. The frequency of categories was calculated to determine the prominence of certain themes.

Data Credibility

Data credibility in qualitative research refers to the validity of the data. Meanwhile, the term dependability refers to the reliability of the data. The researchers strived for the credibility of the data by familiarizing themselves with the research context and having a strong sensitivity to the language used by the participants (Hall & Stevens, 1991). Researchers dove directly into what was happening in the setting of user interactions on Twitter and understood the language style and context of Twitter users. Therefore, the researcher became a Twitter user.

Furthermore, data dependability was obtained through verification between researchers in the analysis process, also called triangulation of researchers (Bachri, 2010). Each researcher discussed and

agreed on the categories that emerged from the analysis results which also referred to Inter-coding Reliability (ICR) that aimed to ensure the reliability of interpretation in the coding process. Moreover, a subset of tweets was evaluated by two independent raters to obtain interrater reliability quantitatively, therefore the results obtained were more objective and were free from interpretation bias (O'Connor & Joffe, 2020). In the initial rater evaluation, the kappa coefficient was calculated at 0.240, indicating a 'fair' level of agreement based on the interpretation scale proposed by Landis and Koch (1977). Following a discussion to achieve intersubjective consensus on the emerging categories, the second evaluation yielded a kappa coefficient of 0.518, reflecting a 'moderate' level of agreement according to the same scale

Conceptual Review

Coping Strategies as Psychosocial Responses during Pandemic

Humans, like other organisms, will have specific behavioral patterns when faced with ecological threats (LeDoux, 2012; Mobbs et al., 2015; Mobbs & Kim; 2020), including the COVID-19 Pandemic, which has caused many issues. The emergence of COVID-19 and its impact on people's daily lives has certainly resulted in

various responses from the community. The psychological and social responses, also known as coping, refer to cognitive and behavioral efforts to modulate internal and external demands that are perceived beyond personal resources (Carver et al., 1989; Endler & Parker, 1990; Folkman, 2012). This term specifically refers to the conscious and voluntary mobilization of action, in contrast to the self-defense mechanism, an involuntary adaptive response. Despite the difference, both aim to reduce or tolerate stress (Katt, 2022; Venner, 1988). Research showed that, on the one hand, specific coping strategies reduce stress and promote positive psychological outcomes. On the other hand, it can exacerbate stress and promote negative psychological consequences (Aldao et al., 2010; Endler & Parker, 1994; Smith et al., 2016). However, the benefits of any coping strategy may also depend on several other factors, including perceived stress control, the availability of sufficient resources to deal with the source of the stress, and the nature of the outcome or impact (Folkman & Moskowitz, 2000; Leis et al., 2024; Zeidner & Saklofske, 1996).

Lazarus & Folkman (1984) clearly distinguish two common coping strategies: problem-solving -focused coping strategies and emotion-focused coping strategies. Problem-solving is an attempt to perform

something active to relieve a stressful condition. In contrast, an emotion-focused coping process involves managing the emotional consequences of a stressful or potentially stressful event. Based on the strategies, coping has two main functions: overcoming problems that cause discomfort (problem-focused coping) and regulating emotions or emotion-focused coping (Saleh Baqutayan, 2015; Van der Hallen et al., 2020). Moreover, Folkman et al., (1986) grouped the several strategies into two main strategies. Coping that focuses on problem-solving includes confrontational coping, planning for complete problem solving, and seeking social support. Meanwhile, coping directed on emotions include self-control, seeking social support, staying away, favorable judgment, accepting responsibility, and running away/avoiding. More general, Folkman and Moskowitz (2004) divided coping strategies into four major categories: focusing on problems, emotions, meaning, and social coping (seeking support).

FINDINGS

As previously mentioned, we used four significant types of coping strategies proposed by Folkman and Moskowitz (2004) as the main theme, including

problem-focused, emotional-focused, meaning, and seeking social support. The coping strategies were examined in three different periods. It should be noted that the results of this analysis were more of a narrative of the responses, specifically coping strategies demonstrated in the tweets, which further means that we did not guarantee that all users were directly implementing those strategies. Nonetheless, from the beginning, researchers assumed that users' tweets could reflect patterns of coping strategies to deal with the impact of COVID-19.

Problem-Focused Coping Pattern

These strategies include finding solutions to problems that arise due to the pandemic. Several most emerging sub-themes are categorized as problem-focused coping, i.e., sharing information, problem-solving strategies at the individual and community levels, adhering to standard health protocols and giving criticisms. Sharing information was tweet activities to share any information related to the COVID-19 pandemic and its effect in articles and infographics, for example.

The impact of the Covid-19 pandemic on mental health needs to be watched out for. The psychological impact of a pandemic can happen to anyone, including children.
<https://t.co/f0ohWpwc4U>.

Sharing news from online media was also categorized as informational sharing.

Wow, 83 percent of health workers experience mental exhaustion during the Covid-19 pandemic. This figure can be reduced if the number of cases in the community decreases..”
@infosehatfkui @univ_indonesia
@Medicine_UI @BEMIKMFKUI
<https://t.co/apE3Bp6cGW> via @okezonenews

It's not about the problem, sir. There is no single method that guarantees to solve the Covid-19 problem. But a matter of choice; we control covid, or covid controls us.
That's the Lock Down thing.
Jokowi: Indonesia Lockdown Doesn't Mean The Covid-19 Problem is Over
<https://t.co/a9dDb7czTU>)

The Twitter user also reflected on the problem-solving strategies, which means any activities or programs implemented by people and the government to handle and minimize the negative effect of the COVID-19 Pandemic, for example, helping, donating, and patrol activities.

Buru district Covid-19 patrol team carries out health protocol patrols to the public at shopping places so that they always wear masks
#wearmasker #tertiblalulalu #agih_5M

"After the morning ceremony and the end of 2020 briefing, the Head of Service together with the DWP Management @ESDMProvJateng symbolically handed over the assistance for the rehabilitation of Uninhabitable Houses (RTLH) from KORPRI and @BaznasJateng for 5 freelance daily employees. #jatenggyeng #jatengpeduli #wearmasker

Other acts categorized as problem-focused coping were obeying the health protocols,

such as staying at home, wearing a mask, keeping a distance, and refusing a friend's invitation to not violate health protocols.

Postpone your homecoming, and take care of your health for the sake of your family.
#DiLarangMudik
#LawanCovid19
#AmanDirumah

Health Protocol Discipline
Use a Mask, Prevent the Spread of Covid-19
#preventcovid19
#disciplinaryprotokolkesehatan #usemasker

Apart from taking the action, criticism also appeared as a form of problem-focused coping. The dominant criticism was directed at the government policies and people's behaviors in facing this Pandemic. These tweeted critics aimed to solve the problems and became media of introspection for citizens and government.

Tuuhhh... how could the ECONOMY BE IMPROVED IF it was locked down in another country?? IF MUKIDI TALKS ABOUT WHAT HAPPENED, THE OTHERWISE...

From the beginning, the government was too afraid of the economic impact of the lockdown, at least in Jakarta. Finally, because of failing to overcome the pandemic, the financial implications became systemic throughout Indonesia for years.

Seeking (and Giving) Social Support - Social Coping Pattern

The second coping strategy shown through tweets was seeking social support which includes individual effort to reduce

stress by seeking social support, e.g. emotional and instrumental support from their community. In the context of Tweeter, beside the direct statements for seeking social support through discussion on social media and networking, seeking for social support could be appeals, greetings, and advices which can be understood as giving supports. Therefore, we named this theme as social coping that includes seeking and giving support.

Appeals mean calls for discipline in implementing health protocols and warnings for these violations. Through tweets, users invited other users to think and agree that the pandemic is a common and shared problem, for example,

Don't ignore it, always maintain and obey the 5M prokes wherever #KawulaModa is. #KawulaModa's role has really helped Indonesia recover from the Covid-19 pandemic.
#TransportasiMaju #EkonomiBangkit
#BersatuLawanCovid #LawanCovid19 #At Home

Let's wear masks. Let's wear masks when we leave the house for the safety of all of us.
#PPKMDarurat #Just stay at home #Obey5M

It can be supposed that they were seeking broader support, therefore a common goal - controlling the spread of the virus- could be achieved.

Given the number of positive cases of Covid-19 continues to grow, don't forget to obey the health protocols. #Cairin #SoTenang #Staysafe

#Dirumahaja #Pakaimasker #Covid19
#Keuangan #OJK #Fintech #PinjamanOnline
#PulihBersama #IndonesiaTangguh
#FintechPendanaanBersama

In addition, seeking social support as previously mentioned was a direct effort to look for support from others in forms of discussing, asking, and networking.

If we play with friends who have just recovered or have had Covid, is there a chance that we will get it or not? #Covid19 #COVID #Vaccine

Please share what the side effects are after the vaccine? #Vaccine #VaccinationCovid19

Meaning - Pattern

To ensure flexibility and align with the inductive nature of the qualitative process, the researcher opted to use the term cognitive coping as a theme instead of meaning. This choice was made because cognitive coping encompasses a broader scope, within which meaning is also subsumed.

Cognitive coping includes any strategies in which a person uses mental activity to manage a stressful event or situation. In more specific, it focuses on trying to reflect on what happened. Several emerging sub-themes are categorized as cognitive coping, namely appreciation, optimism, views, and meaning or reflection. Appreciation was tweets that contain

praises and appreciations for the efforts of certain parties in handling the COVID-19 Pandemic, for example,

Thank God, thank you, the Indonesian government, I have the complete vaccine for free, and it's smooth. I hope we're all healthy and recover from the pandemic; amen. It's time to continue hibernation after the vaccine and eat the medicine. #at home #wearingmasker #ayovaksin #VaksinasiLindungiNegeri

Optimism was a group of tweets that hope for something good related to the current situation, including belief that good things would happen.

Have you received the Covid-19 vaccine? Healthy Spirit, Together We Fight Covid-19! #vaccin #covid19 #kawalcovid19 #amandIrrelevantumah #sehat #imunitas #kangabus #suplemen

Twitter users also convey their point of view on the current pandemic, categorized as views. Seems to be an observer, they explained what was happening, how it happened, and even a guess as to why it happened. For example,

It turns out that behind the Covid-19 pandemic, it is not only physical health that needs to be taken care of, but mental health as well. Not a few people are almost stressed because of this pandemic.

Finally, meaning or reflection means the understanding of the situation, finding

insights, lessons and new perspectives of life.

@susukntlmaaniis @Jelajah513
@susipudjiastuti —We also can't be jealous of those who can #stayathome comfortably because everyone's struggles in this Covid-19 time are not the same... Some are given the EXCESS OF MATERIALS to be able to #stayhome... Some are struggling with all the difficulties to survive.

From the tweets, people seem to explore the meaning of life by self-reflecting to understand life lessons which also may refer to meaning making.

Emotion-Focused Coping Pattern

Emotion-focused coping involves regulation of feeling and emotional responses to the problems instead of addressing the problem. There were several categories emerged from tweet analysis, namely expression of feeling, entertainment, humor, pray and worship. The expression of feeling involved the tweets that explicitly convey how emotional users are experiencing during the pandemic period. Expressing the feelings were more dominated by negative emotions (angry, upset, sad, etc.) and a small number of tweets expressing positive emotions.

@keuangannews_id This is the bastard of Indonesia. Devil in human form. '‡ Foreign

Media: Jokowi Refuses Lockdown For Fear of Elite Entrepreneurs.

I really hate queuing up for vaccines in the morning. Got a number and queued. Just keep on losing, the same as those who know insiders. New on arrival can directly enter without waiting in line. Perfect boss. How are we? We are the ones in line since earlier... #vaccination #vaksintangerang #Covid_19

Tweets contained any sarcasms are also categorized into expression of feeling.

*WHO forbids vaccination by threatening here, even if there is no vaccine letter, you can't take care of anything, you can't go anywhere.
#PresidenTerburukDalamSejarah
#pakaimasker #PakPresidenKapanMundur*

Entertainment is category of tweets that describe the users' leisure activity or hobbies to entertain their self, for example,

In the afternoon during the holidays, you can grow crops

@detikcom During the long weekend, I enjoy spending time at home and reading short stories, sir. #amandirumah

Meanwhile, humor includes joking or funny tweets that amuse the reader/people. Some users treat the issue of the pandemic as a joke. They were laughing at the misery of life. for example,

If, until July 25, 2021, there is no change in the extension of the PPKM EMERGENCY,

it will be followed by a penalty shoot-out.
#PPKMDaruratLindungiKita
#PPKMDaruratBerimpakBaik
#PakaiMasker
 Emotion-focused coping strategy was also reflected in in tweets that contain elements of spirituality such as worship and prayer, including the delivery of motivation from a religious point of view. For examples,

pandemic is HEALTHY. The best condition during a pandemic is SAFETY. Many, many are grateful if this morning we wake up in a state of being given the favor of FAITH, the blessings of HEALTHY and SAFE..#Use a Mask

In conclusion, researchers presented the most salient categories (above 15%) in the following table.

The best achievement during a pandemic is HEALTHY. The best success during a

Table 1. The Forms of Coping Strategy Narration

Theme	Period 1	Period 2	Period 3
Problem-Focused	- sharing information, - problem solving strategies, - delivering criticism.	- sharing information, problem solving strategies, - implementing health protocols - delivering criticism.	- sharing information, problem solving strategies, - delivering criticism.
Emotion Focused	- expression of feeling - entertainment	expression of feeling	- expression of feeling - pray - humors
Cognitive	- finding a meaning - optimism	- views/insight, optimism, - appreciation, - finding a meaning	-views/insight,
Social	Appeals	- appeals, - social support seeking	- appeals, - social support seeking

The quantification of content analysis resulted in the percentage of each theme

and categories. The following is the percentage of each theme in three periods of time.

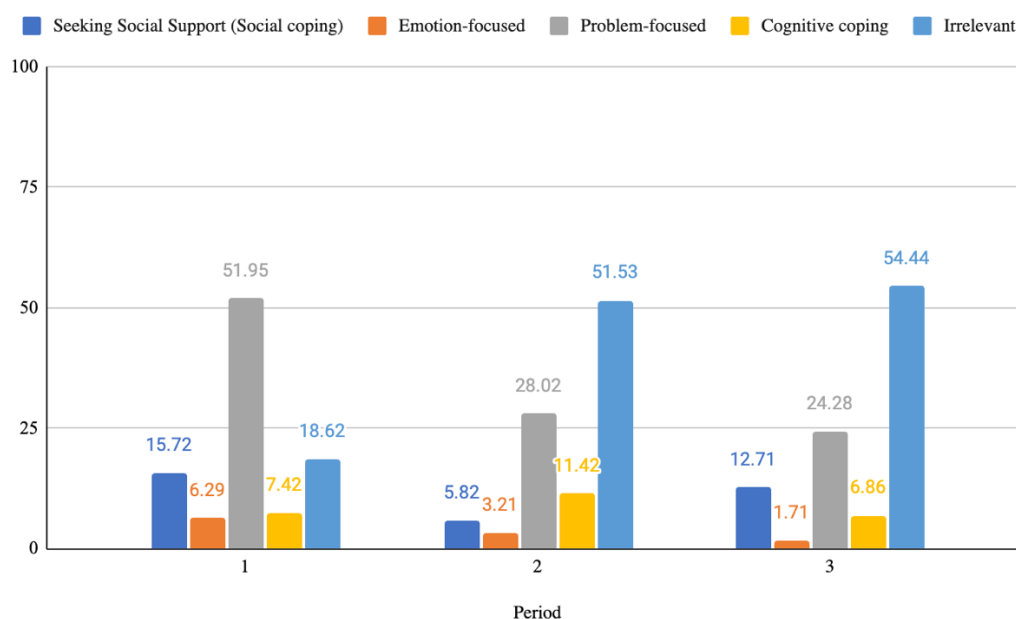


Figure 1. The percentage of Each Themes

Based on the chart above, problem-focused coping was the most frequent strategy shown in the analyzed Twitter data from three periods. Seeking social support was the second most strategies appeared, especially in the first and third periods, whereas cognitive coping was the second most strategies in the second period. The emotion-focused pattern appeared relatively less in all three periods compared to the other three patterns of coping strategies.

Furthermore, a pattern can be seen in each coping strategy. Social coping was the same as cognitive coping which decreased in the second period, then increased again in the third period although not greater than the percentage in the first period. Meanwhile, emotion-focused coping and problem-focused coping continued to decline until the third period. It is also

interesting to note that the irrelevant themes increased from the first to the third period, even more than the four supposed themes, especially in the second and third periods.

DISCUSSION

To discuss the findings, researcher combining psychological and communication theories to provide a comprehensive understanding of psychosocial responses, spesifically coping mechanism. Psychological theories may offer insight into internal cognitive and emotional processes, while communication theories emphasize the role of external factors, such as social interaction and information dissemination, in shaping responses to threats.

In terms of psychology, the theory used as an umbrella to explain the findings is the

Transactional Model of Stress and Coping (Lazarus & Folkman, 1984). This theory was also used from the beginning to explain the concept under study. This theory provides a comprehensive framework for understanding how individuals perceive and respond to stress. This model emphasizes the dynamic interaction between a person and their environment, highlighting the role of cognitive appraisal in determining stress responses. We also used the principles of Social Cognitive Theory developed by Albert Bandura (1986). This theory provides a comprehensive understanding of how individuals learn from their social environment while actively participating in their own behavioral development through cognitive processes and social interactions. Meanwhile, from the communication perspectives, researchers used Uncertainty Reduction Theory (URT, Berger & Calabrese, 1975) that provides a framework for understanding how individuals manage uncertainty through communication strategies, emphasizing the importance of predictability and information exchange in building relationships. There are several points discussed from the result according to principles of these theories.

Active Coping during Pandemic: From Individual Social-Coping to Collective Coping

During Pandemic, active coping is a common copy strategy adapted, which is reflected through narration in twitter. Active coping is the utilization of those psychological or behavioral coping efforts characterized by an attempt to use one's own resources to deal with a problem situation (Zeidner & Endler, 1996). The example of the coping style is solving problems, seeking information, seeking social support, seeking professional help, changing environments, planning activities, and reframing the meanings of problems (Li, 2006).

We found that problem-focused coping was most narrated on Twitter. Problem-focused coping is characterized by one's attempt to eliminate a perceived threat or stressor, embodied in direct action, control, and dynamic behavior, and is considered relevant and effective in dealing with problems (González-Morales et al., 2010). Since the most common strategy on Twitter was the problem-focused strategy, we can infer that most Twitter users showed active coping during the Pandemic, especially in sharing information. Searching and sharing information is related to one of the individual strategies in dealing with threats such as COVID-19.

These findings are in line with the previous studies (Chong & Momin, 2021) that information sharing strategy was found

to be the most common coping strategy implied in all six concerns during the Pandemic, namely product / service, stakeholder management / interaction, leadership/operation/management, decision-making, new normal/new behavior/new mindset, and compliance with regulations. The findings were also suitable to the tendency of Indonesian people to seek more information related to the Pandemic from the internet (Minza et al., 2022). In this study, the information shared was the updates on the number of COVID-19 sufferers, tips on maintaining health, activities at home, information on available public services, online webinar information, and so on. Discussions on social media are not only related to the virus but also its impacts, such as social distancing, travel bans, self-quarantine, and changes to business and economic arrangements (Chen et al., 2020).

In addition to information sharing, problem-solving strategies were mainly applied at the community level or by a group of stakeholders. Therefore, these strategies can lead to creating a policy or regulation. In this research, the example of the problem-solving strategies was monitoring conducted by the police officers to order people to comply with health protocols and arranging donations distributed to those in need. Several studies

show that during the Pandemic, the authorities implement strategies to cope with the impact of COVID-19, such as the Wuhan government responding to cases from sources found on Weibo (Li et al., 2020) and sharing information or knowledge about situation updates, advise on preventive measures, fights against rumor, etc. (Liao et al., 2020).

The second most common form of coping used by Twitter users in the three periods was social coping. According to APA Dictionary (2022), social coping refers to any interpersonally based stress-management strategy, for example, seeking support from family members, friends, or formal service providers to help him or her through a challenging event or situation. Significant others can provide instrumental, informational, and emotional assistance (House et al., 1985).

In the context of Twitter, social coping also involves giving support because several Tweets' patterns show that giving support is intended to gain support from others, especially in the form of calls or appeals. People tweeted a call to obey standard health protocols. Thus, social support would come from other Twitter users. An appeal was also made by government-owned accounts that urge them to always obey health protocols in potential situations that allow many people to gather,

such as during Eid moments, passing between cities, and so on. The calls for adhering to the health protocols could be reminders for each other, leading to solidarity and social action. Mittal et al., (2021) showed that governments worldwide have also gained support from Twitter users despite the hardship's citizens face.

The other form of social coping was seeking social support per se, as initially defined as social coping. Twitter users directly ask for support from other users through their tweets or indirectly seek it by asking questions. Related to this social support seeking, during the Pandemic, support from work colleagues was also found to be one of the most frequent social coping techniques used by healthcare workers to reduce stress during the Pandemic (Maraqat et al., 2020).

Social coping adapted by individuals and reflected through their tweets or social media lead to what we can call as collective coping. In the other words, social media generally might represent collective coping. The term focuses on how individuals cope with stressful events through making sense of their experiences with a network of interpersonal relationships (Lyons, Mickelson & Sullivan, 1998). Sharing information and appeals or calls for complying with health protocol were the primary strategy that could initiate

collective coping. Initiatives to share information and educate people regarding the COVID-19 Pandemic become the purpose of the media movement on a large scale to inhibit the spread of the virus. This initiative has arisen spontaneously, independently, and without affiliation with any party (Djalante et al., 2020). This can indicate a collectively constructive form of active adaptation; specific individuals or parties take advantage of the communication process and the mobilization of social relations (Włodarczyk et al., 2016) in adapting to COVID-19, in this case, reducing its spread.

Previous studies showed the critical role of social media on collective coping. For example, a communication network of social support was created, and social interaction became possible through social media during the Japan earthquake that impacted Tsukuba (Kaigo, 2012). Similarly, people reported feeling a sense of connectedness and usefulness, felt supported by others, and felt encouraged by the help and support being given to people through social media after several disasters in Australia and New Zealand (Taylor et al., 2012). Survivors who used social media also felt, to some extent, more hopeful about the future (Taylor et al., 2012). Moreover, a study exploring the use of

Facebook for collective coping in the immediate aftermath of Typhoon Haiyan found that Facebook facilitated three collective coping strategies (Tandoc & Takahashi, 2016). During COVID-19 Pandemic, which has also been perceived as a disaster, the pattern of strategies might also emerge. Social media has become a media for social connection and support (Naslund et al., 2016), the social construction of meaning, expression of feelings and thought (Naeem, 2021), and finally, social mobilization or social actions (Kidd & McIntosh, 2016).

Moreover, criticism is also categorized as active coping focusing on problem-solving because it tries to raise people's awareness and trigger the authority to take any action. Criticism is also common in previous research during pandemics (Boucher et al., 2021; Lu et al., 2021; Williams et al., 2020). According to the political solidarity model, critiques are evidence of the majority challenging the authority. Challenges toward the authority occur when the meaning of the relevant majority identity is no longer shared with the authority but with the minority or because the authority views that the authority no longer represents the values and norms of the majority (Subasic et al., 2011). Therefore, criticism might be discussed as the way to initiate a social

movement that may, in turn, facilitate collective coping in facing a crisis.

“Going Further After Expression of Feeling”: Meaning-Making as Cognitive Coping.

More than expression of feeling on Twitter, people also tend to show the meaning they found, even as their views during the Pandemic. Cognitive coping is any strategy in which a person uses mental activity to manage a stressful situation. A variety of different forms exist, such as putting the experience into perspective, seeking to understand the causes of the situation, thinking about steps to resolve the situation, thinking about pleasant experiences instead of the current difficulty (positive refocusing), redefining the situation to emphasize potential benefits (positive reappraisal), exaggerating the negative consequences of the event (catastrophizing), blaming oneself or others for the occurrence of the event, dwelling on the negative emotions associated with the event (rumination), and minimizing the situation or its impact (cognitive avoidance). Some of these strategies (e.g., positive reappraisal, positive refocusing, and putting things into perspective) are generally considered more effective than others and associated with more positive

psychological outcomes (APA Dictionary, 2022).

Finding meaning or reflection, views or perspectives, and optimism, which were found in this study, could be classified as positive cognitive coping strategies, as previously mentioned. Twitter users tend to reflect, find meaning in the pandemic conditions they were facing, and share their views on certain aspects that this situation affects. They also tried to focus on the positive thing and hope for the best in the future.

Finding meaning was the most common form of cognitive-based coping, which could also refer to making meaning. Meaning-making has been defined as "the development of an understanding of the event and its implications" (Davis et al., 1998). Changing everyday life events, such as the impact of the COVID-19 Pandemic, requires altered meaning-making, which is carried out concerning the flexibilities and rigidities of the context (Josephs & Valsiner, 1998). Making meaning usually emerges after a negative experience as a process of adjustment to the adverse life event. The first assumption is that there are cognitive consequences after an adverse life event (i.e., regarding the safety of the world, the benevolence of others, and the worth of the self). The second idea is that in the process of successful adjustment, there

is a change from overwhelming negative emotion to an increase in positive emotion and better regulation of negative emotion (O'Connor et al., 2002). Therefore, making meaning both a cognitive and an emotional process involves cognitive restructuring, which allows people to oscillate from the negative emotions produced by the stressful event to the positive emotions that the meaning generates. For example, an individual who has lost a loved one due to a pandemic or has experienced economic bankruptcy moves from negative emotions (i.e., overwhelming grief) to a positive reframing process that this incident was a lesson to him and that the loved one is no longer suffering or that the lost property is penance for him.

Making meaning was possible among Twitter users, considering many of them felt negative emotions. Social media facilitates users to express their feelings. Twitter users could vent anger, disgust, fear, sadness, and other psychological feelings they experience during this Pandemic (Mathur et al., 2020). In this study, we found that many Twitter users expressed their feelings as a form of emotion-focused coping. Mittal et al., (2021) found that Twitter users kept themselves entertained during the Pandemic by doing fun things, such as music, video games, and humor, categorized as emotion-

focused coping. When they turned to the view and reflection of their life, then it could be seen as cognitive coping. In future studies, we can further examine the cognitive coping preceded by emotional-focused coping to understand the mechanisms of making meaning comprehensively.

In addition, meaning-making and optimism, which also emerged as one of the most common strategies, could be related to the spirituality and religiosity of Indonesian people. Aspects of spirituality and religiosity are associated with a person's daily life habits and experiences, including a person's response to traumatic experiences or events (Ren, 2012). Spirituality and religiosity are essential coping resources, facilitating adaptation after a crisis (Greeff & Loubser, 2008). In Indonesia, a study on local communities following the Mount Merapi Eruption disaster in Sleman Yogyakarta showed that spirituality could predict post-traumatic development, which refers to positive psychological changes resulting from struggling through traumatic events (Subandi et al., 2014). The COVID-19 Pandemic that has changed the way people live can also be a traumatic or unpleasant experience for certain people.

Irrelevant Narration as a Response: What Can We Imply?

During our analysis, we also observed a significant increase in irrelevant tweets from period 1 to periods 2 and 3. These tweets included ads for products and activities to fill time during the pandemic and subtle promotional content delivered through brand accounts, this is also the case in Italy, which saw a spike in advertisements during the pandemic, using supportive hashtags to convey a sense of solidarity and unity (D'Uggento et al., 2023).

In addition, we found a large amount of incomplete data, including tweets with only hashtags and no text, fragmented tweets lacking coherence or meaning, and tweets in foreign languages. We therefore classified these cases as irrelevant. It's important to note that this issue could be due to a system scraping error during the data retrieval process.

Furthermore, the identification of proportional shifts between periods is solely based on the data of tweets that appear, so it cannot be claimed that there is an explicit shift in behavior. Given that predicting changes in social media behavior is not something simple and easy, further studies are needed regarding this percentage shift. Irrelevant at the individual level does not represent the same account because the user data is scraped randomly according to the specified keywords. There is no assurance

that the accounts obtained will be the same between periods, so it is difficult to identify whether those who are proactive in finding solutions to problems in the first period will do the same in the next period.

However, at the macro level, it can be assumed that this change in behavior occurred because, at the beginning of the pandemic, uncertainty of the situation, confusing information, many hoaxes (Depoux et al., 2020), and government policy factors (Ahmad & Murad, 2020) increasingly put pressure on the community, so that tweets appeared in the form of opinions and criticisms that led to the resolution of the pandemic. The percentage of problem-focused coping becomes dominant, such as with medical issues (Saud et al., 2020). Information changes affect behavior in response to these changes, such as triggering anxiety (Ahmad & Murad, 2020). Unlike the first period, in the second period the information was clearer and there was a mass vaccination policy. The number of irrelevant tweets can also indicate that people's focus has begun to shift. Initially, people's attention was on the pandemic and its impact, but as people began to adjust, they began to change their focus.

Speech-Act Pattern during Crisis, Especially on Social Media.

This study may contribute to the development of speech act psychology which refers to the study of an instance of the use of speech considered as an action, especially regarding the speaker's intentions and the effect on a listener (APA, 2023). We assumed that studying the speech act may give insights on how a community utilizes the social media narration as collective coping during a crisis, including the leader and citizen. Previous studies have been conducted examining the effect of words used by leaders in crisis management or in crisis response strategy (Coombs, 1995; Coombs, 1999; Stam et al., 2018).

Through this study, we infer that there are five most common psychosocial response's narration, specifically coping styles narration shown by twitter users: informational sharing, emotional expression, insight sharing, expression of views/opinions, and appeals to seek for supporters. These findings could be further studied in other contexts of social media, beside Twitter. By acknowledging the pattern, we can find better ways to manage the public in responding to crises in various phases of crises.

Limitation

As social media research in psychology, this study had several considered limitations. Firstly, the tweets

scraped were not all representative of tweets produced by users in a day, only a few percent of all tweets. Besides, many of the data taken were duplicated and used languages other than Indonesian. To minimize this issue, researchers may explore and use other programs for scraping the tweets. If the tweet's scraping uses python, researchers may modify the code or syntax for collecting the tweets. Secondly, the hashtags used may not represent the entire tweets that show a psychosocial response or coping with the situation and impact of the pandemic. Related to this issue, the researcher may examine more possible related hashtags or keywords and compare them in terms of the number of tweets collected and the quality of the tweet content. Consequently, before the data collection process, researchers may conduct a tryout with the hashtags or keywords listed.

CONCLUSION

This study found that Indonesian Twitter users more often showed problem-focused coping strategies during the three periods of COVID-19 in Indonesia. The second most used strategy was seeking social support in the first and the third periods; meanwhile, cognitive coping was the second most strategy in the second period. Informational sharing was the best

form of problem-focused coping strategy. The other forms were problem-solving strategies and delivering criticism. Regarding social coping, calls or appeals and social support seeking were the most form of strategies tweeted. The forms of cognitive coping which were mostly tweeted were finding meaning or reflection, views, and optimism. In terms of emotional-focused coping, expression of feelings was the most revealing tweet revealed. Entertainment, humor, and worship also appeared. The irrelevant theme was also interesting to discuss further since it was most salient in the second and third periods.

The results of this study may provide theoretical and practical implications. First, the results of this study can contribute to the existing body of literature by showcasing how coping strategies manifest in a digital context, particularly during a pandemic. It highlights the need to expand traditional coping frameworks to incorporate digital behaviors such as informational sharing and online social support-seeking. The study highlights the role of social media as a platform for collective coping, suggesting the need to establish "digital coping" as a distinct paradigm within coping research. This could involve exploring the speech-act psychology, the intersection of psychology,

communication, and even technology to understand how individuals and communities adapt to stressors in virtual spaces. Second, the study can be applied in the public health communication strategies, social media policy and governance, even mental health interventions, all of which focus on minimising the impact of the crisis on various aspects of life.

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