Does the Student Feel Bothered by COVID-19 News?

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ABSTRACT

COVID-19 pandemic generated copious amounts of news regarding COVID-19 that is circulating among the public. Both positive (e.g., vaccine development) and negative (e.g., COVID-19 cases increase) news affect emotional states on an individual level, specifically for the student in higher education. They are struggling in challenging situations while adapting to online learning, which is not easy for them. This study aims to gain knowledge and gather empirical data on the COVID-19 news impact on young adult students in one of the public universities in West Java, Indonesia. We used an experimental approach in this study. Sixty participants were randomly assigned into control and experiment (i.e., being exposed to COVID-19 news) groups. Positive Affect Negative Affect Schedule was used to measure participants' emotional state before and after the experiment. This study shows that COVID-19 news significantly decreases participants' positive affect when participants have personal experience with COVID-19. Therefore, information sharing regarding COVID-19 has to be done with caution to protect individual emotional states during the pandemic. The student also should restrict the abundant information relating to COVID-19 to maintain their positive emotional state.

Keywords: COVID-19, Emotional State, Information, PANAS.

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I. INTRODUCTION

The COVID-19 pandemic has had a huge impact on everyone around the world. The virus has spread through almost every country globally with its infamous rapid spread, including Indonesia where it only took a couple of months for it to be fully spread across the country (Fadli, 2020). This is worsened by the spread of several new COVID-19 variants in Indonesia, such as B117, B1351, and B1617 which also have a higher contagious rate, making it concerning to the public due to the impact that it might have during the pandemic (Rokom, 2021). The Indonesian COVID-19 information center website stated that the government had set several policies in response to said impacts. The policies are divided into different parts to prevent further spread which consists of constructing COVID-19 management sites, enforcing mandatory prerequisites and protocols targeting anyone who is traveling through public roads and doing outdoor activities.

Several studies have found that students report a decrease in their likelihood of taking online classes due to their recent experience in the COVID-19 outbreak. Students face an increasingly uncertain environment regarding their financial and health stability (e.g., lack of resources to complete their studies due to fear of becoming seriously sick) and the transition to online learning may have affected their academic performance (Aujeco *et al*., 2020). It makes them feel more uncomfortable with the pandemic situation.

Huge amounts of COVID-19 information have spread among the public, showing that the mass media plays a pivotal role in spreading information and broadcasting the latest news regarding the COVID-19 outbreak to the public (Akbar, 2021). This role has encouraged the media to publish not only negative information, but also positive information that promotes, entertains, and inspires the masses (AR, 2018). The negative information regarding COVID-19 that are covered by the media are diverse, ranging from current confirmed cases and mortality rate reports, the dangers of the virus, and public bad behaviors during the pandemic to virus spread predictions. On the other hand, positive information about COVID-19 also appears alongside the negative ones, such as the discovery of the COVID-19 vaccine, the copious amount

of cured COVID-19 patients, and reports regarding the human immune system's ability to sufficiently counter COVID-19 (Setiawan *et al.*, 2020).

The widespread of negative COVID-19 information, whether in its offline or online form, has indirectly affected the public, causing them to panic (Triyaningsih, 2020; Depoux *et al.*, 2020) and is potentially causing psychological stress that would affect the immune system, eventually making them more susceptible to be infected by COVID-19 (Cahyono, 2020; Herlinawati, 2020). However, at the same time, information regarding COVID-19 could also have positive effects, such as raising awareness and motivation to gain more comprehensive information about COVID-19 (Triyaningsih, 2020).

II. THEORETICAL LENS OF THE STUDY

The Public's response towards news and information regarding COVID-19 could be categorized as reactive or even overactive (Triyaningsih, 2020) which was shown in the effect of said COVID-19 news, such as the change in people's attitude towards political situations and scientists, the desire to do social distancing, and declining mental health (Hart et al., 2020; Kim et al., 2020; Stainback et al., 2020). However, out of all the visible impacts of COVID-19 news, one of the impacts that have become a focus is its impact on emotional state. Hamidein et al. (2020) found that COVID-19 news could evoke certain emotional states, especially anxiety. This finding is further supported by Bazán *et al.* (2021) study who had found that health workers' emotions are affected accordingly (i.e., positive news evokes a positive emotional state and negative news evokes a negative emotional state) with the content of COVID-19 news that is administered to them.

The relationship between news and emotional state is actually not a recent discovery. Hong & Verboon (2019) stated that the relationship between negative news and a negative emotional state has been found in numerous experimental studies (Balzarotti & Cicero, 2014; Johnston & Davey, 1997; Marin et al., 2012; McIntyre & Gibson, 2016; Szabo & Hopkinson, 2007; Unz *et al.*, 2008; Veitch & Griffitt, 1976), and similar discovery was also found with positive news (Bazán *et al.*, 2021; McIntyre & Gibson, 2016; Shekhar, 2021). These impacts on the emotional state should be studied further for their impact on society. Various occurrences in the general public such as excessive alcohol consumption (Karpyak, 2016), motivations to achieve goals in the future that involve self-growth and search for meaning in academic settings (Kryza-Lacombe, 2018), and even career decision-making difficulties (Anghel & Gati, 2019) are all affected by the individual emotional state. However, a new question appears, what about COVID-19 news that does not have any specific emotional valence? Most similar researchers used the news that has certain emotional valence to see its impact on the individual emotional state (Balzarotti & Cicero, 2014; Bazán *et al.*, 2021; Johnston & Davey, 1997; Marin *et al.*, 2012; McIntyre & Gibson, 2016; Shekhar, 2021; Szabo & Hopkinson, 2007; Unz *et al.*, 2008; Veitch & Griffitt, 1976), but there has not been any study that studied the impact of COVID-19 news is not nuanced by any particular emotional valence towards the individual emotional state. Therefore, this study aims to find empirical evidence on the impact of sans emotional valence COVID-19 news on the emotional state of higher education students.

Emotions are determined by received stimulus appraisal in which it mediates stimulus and emotional response unconsciously while involving cognitive activity in order to decipher the emotional context of it. (Lazarus & Folkman, 1984). Cognitive appraisal refers to the personal interpretation of the situation that eventually influences the intensity of generated stress in response to the situation. Individual stress levels differ widely towards the same experience based on their unique and personal interpretation of the event. Cognitive-process-involved appraisal will categorize the stressor in accordance with its significance towards the well-being of the individual and available social, cultural, and psychological resources (Lazarus, 1991). There are two appraisal methods, primary appraisal and secondary appraisal. The primary appraisal refers to the initial evaluation to determine whether the situation or stimulus can be perceived as a threat or not. Based on the cognitive decisions made from primary appraisal, the secondary assessment will be commenced. Secondary assessment refers to the evaluation regarding an individual's ability to handle a particular situation especially when the primary appraisal has categorized the stimulus as a danger, threat, or challenge. The result of these secondary assessments will determine a coping effort which in turn, through the cognitive and evaluative processes, individuals will make decisions on how to overcome the stimulus that has been perceived as a stressor. Eventually, the resulting adaptive results can be positive or negative to the person's emotional state.

Based on the appraisal process, COVID-19 news is assumed to be perceived by participants as a stressor. Furthermore, participants will assess the stress through the process of primary appraisal. Occurred individual appraisal depends on the participants' personal defined meaning of the stimulus, making the judgment vary from one to another whether the stressor is seen as a threat or harmless. Participants' view of the stressor profoundly influences the process of further judgment and eventually determines their unique coping effort to face the stressor. In other words, after establishing the stressor as a danger or threat on the

primary assessment, there is a secondary assessment focused on what can be done to overcome stress that produces a coping effort in participants based on the cognitive and individual evaluative process to resolve the matter. In turn, participants' adaptation to the obtained results may be positive or negative to the emotions to come.

The appraisal of said stimulus produces distinct emotions and makes the individual adaptive to different status changes and goals. Such emotions direct attention to the news which will be helpful in responding to types of situations that are perceived from the news that might arouse emotions. Adding to that, Levine and Pizarro (2008) explain that individuals in the process of the stimulus appraisal are conducted differently depending on personal perceived emotions on choosing to focus on emotions of happiness, fear, anger, or sadness based on basic and universal emotional ideas. These four conditions are associated with unique and coherent patterns in coming to judgments, subjective feelings, and action trends. The results support a pattern of appraisal that eventually gives rise to an individual's basic emotions. It has been established that even the same event can produce a different result such as anger or sadness in accordance with the individual's ability to deal with the situation (i.e., facing the COVID-19 news and interpreting the information) and their confidence in dealing with the cause of the perceived stressful situation. Therefore, the study assumes that news on COVID-19, regardless of its emotional valence, will affect the emotional state of each person's assessment or interpretation of the presented news content.

III. METHODOLOGY

Use Sixty students were chosen for this study using the convenience sampling technique, consisting of 30 participants in the experimental group and 30 participants in the control group. The participants consisted of 45 females and 15 males. Consent is obtained in writing from participants regarding their willingness to take part in this study.

The Positive Affect Negative Affect Schedule (PANAS) was chosen as the psychological measurement tool in this study, administered through an online form. First developed by Watson *et al.* (1988), PANAS has been adapted into the Indonesian version (Watson *et al.*, 1988; Yusainy *et al.*, 2019; Yusainy & Lawrence, 2015; Yusainy & Wicaksono, 2019). The scale consists of 20 items with 10 items measuring positive affect and the remaining 10 items measuring negative affect that will describe the participants' emotional state when combined. The scale used a Likert scale ranging from 1 to 5 (1 = not accurate at all and 5 = very accurate).

The two-group pretest-posttest design was used to measure the impact of the stimulus on participants' emotional states by measuring the difference between participants' pretest and post-test scores and comparing the experiment and control group results to one another (Christensen, 2007). The variable types were manipulated to identify the impact of news about COVID-19 on the emotional state. This was done by giving news about COVID-19 to the experimental group and general, random information to the control group. The pretest and post-test scores were then compared to see the difference in the emotional state that was caused by the news (or the general, random information for the control group) that was given.

The COVID-19 news and the general information were designed to have no emotional valence by avoiding words associated with particular emotional valence according to Aslam *et al.* (2020).

The study was conducted as follows:
1. The early screening was done to find participants who gave their consent to participate in this study through the messaging application.
2. The participants were randomly assigned to the experiment and control group. The experiment was conducted through an online meeting application. The participants would be given a link to open a form consisting of pretest questions before the experiment was conducted.
3. The experiment begins when participants were given headlines as the stimulus in the form of presentation slides that were screen shared from the online meeting application. The participants in the experimental group would see headlines about COVID-19 and the control group would see headlines about general information.
4. Before the stimulus was given, the participants would receive a link to a form for them to rewrite the news that they had read in the online meeting application. The link also contains post-test questions and some additional questions about their opinion on the news that was given and their own personal experience.
5. The participants were instructed to rewrite the news as they are reading them as accurately as possible. The accuracy of the writings is not the focus of the study but it is instructed so to make sure that the participants have read the stimuli thoroughly.
6. During the experiment, the researchers would constantly emphasize to not click on the "next" button ahead of the others so that all of the participants should begin and complete the experiment at the same time.

The interval scale was used in this study by measuring the difference in PANAS scores before and after the news. The Shapiro-Wilk that was used found that the data in this study were distributed normally. Because of this, Paired T-Test was used to analyze the inferential statistics. All of the statistical analysis that was done in this study uses the Statistical Package for The Social Science (SPSS) version 26.

IV. RESULT AND DISCUSSION

The participants in this study consisted of 60 students, with 30 participants in the control group and the other 30 in the experimental group. Further analysis of the demographics showed that in the control group there are 20 female participants (66.7 %) and 10 male participants (33.3 %). As for the experimental group, there are 25 female participants (83.3 %) and 5 male participants (16.7 %).

The participants in the control group consisted of 18 participants aged 20 years old (60 %), followed by 8 participants aged 19 years old (26.7 %), 3 participants aged 21 years old (10 %), and 1 participant aged 18 years old (3. 3%), with the mean age of 19.6 years old. As for the experimental group, the participants consisted of 15 participants aged 20 years old (50 %), followed by 6 participants aged 19 years old (20 %), 5 participants aged 21 years old (16.7 %), 3 participants aged 18 years old (10 %), and 1 participant aged 17 years old (3.3 %). The mean age is 19.7 years old.

TABLE I: PARTICIPANTS' GENDER DEMOGRAPHIC

Group		Gender	n	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Experiment	Valid	Female	25	83.3	83.3	83.3
		Male	5	16.7	16.7	100.0
		N	30	100.0	100.0	
Control	Valid	Female	20	66.7	66.7	66.7
		Male	10	33.3	33.3	100.0
		N	30	100.0	100.0	

TABLE II: PARTICIPANTS' AGE DEMOGRAPHIC

Group		Age	n	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Experiment	Valid	17	1	3.3	3.3	3.3
		18	3	10.0	10.0	13.3
		19	6	20.0	20.0	33.3
		20	15	50.0	50.0	83.3
		21	5	16.7	16.7	100.0
		N	30	100.0	100.0	
Control	Valid	18	1	3.3	3.3	3.3
		19	8	26.7	26.7	30.0
		20	18	60.0	60.0	90.0
		21	3	10.0	10.0	100.0
		N	30	100.0	100.0	

TABLE III: DESCRIPTIVE STATISTICS

	Group	N	Minimum	Maximum	Mean	Std. Deviation
Experiment	Positive Affect – Pretest	30	13	36	25.90	6.250
	Positive Affect – Posttest	30	10	37	23.83	7.598
	Negative Affect – Pretest	30	11	36	21.47	7.973
	Negative Affect – Posttest	30	10	40	20.93	9.108
	Valid N (list wise)	30				
Control	Positive Affect – Pretest	30	12	38	25.03	6.212
	Positive Affect – Posttest	30	10	40	24.53	8.089
	Negative Affect – Pretest	30	10	39	20.77	7.021
	Negative Affect – Posttest	30	10	37	19.20	6.557
	Valid N (list wise)	30				

The collected data was analyzed using descriptive statistics. In the control group, the results showed that the pretest mean for positive affect is 25.03 (SD = 6.212), and negative affect has the mean of 20.77 (SD = 7.021), while the post-test means are 24.53 (SD = 8.089) and 19.20 (SD = 6.557) for positive and negative affect, respectively. In the experimental group, the results showed that the pretest mean for positive affect is 25.90 (SD = 6.250), and negative affect has the mean of 21.47 (SD = 7.973), while the post-test means are 23.83 (SD = 7.598) and 20.93 (SD = 9.108) for positive and negative affect, respectively. Based on the development and validation of PANAS that Watson did, Clark and Tellegen (1988), the mean (and standard deviation) that was used as a standard for this scale is 33.3 (SD ± 7.2) for positive affect and 17.4 (SD ± 6.2) for negative affect.

The z-score was measured to identify the difference between positive and negative affect in each of the groups before and after the experiment. The control group showed that the z-score for positive affect is -1.14861 in the pretest and -1.218056 in the post-test. These results indicate that positive affect did not

significantly decrease in the control group. The negative affect has a z-score of 0.54355 in the pretest, and 0.2903226 in the post-test, which indicates that negative affect did not significantly decrease in the control group. The experimental group showed that the z-score for negative affect is 0.6564 in the pretest and 0.5694 in the post-test. These results indicate that positive affect did not significantly decrease in the experimental group. The positive affect has the z-score of -1.0278 in the pretest, and -1.315278 in the post-test. These results showed that positive affect would only significantly decrease in the experimental group with very small effect size (d = 0.066) (Cohen, 1998). The positive affect scores in both groups are relatively low or below average, which were shown by the negative z-scores. As for the negative affect, both groups' z-score tends to be higher than the mean but not higher than 1 standard deviation.

The Shapiro-Wilk test was used as the normality test. The results showed that the data is distributed normally for positive affect (0.938; p > 0.05) and negative affect (0.951; p > 0.05) in the experimental group, and also negative affect in the control group (0.960; p > 0.05). As for positive affect in the control group showed that it is not distributed normally (0.899; p < 0.01). After the normal distribution was tested, the paired-samples t-test was used for the parametric statistical analysis of the normally distributed groups, while the Wilcoxon test was used for the non-parametric statistical analysis of the not normally distributed group.

TABLE IV: NORMALITY TESTS

Group		Shapiro-Wilk		
		Statistic	df	sig.
Experiment	DifNeg	0.951	30	0.181
	DifPos	0.938	30	0.078
Control	DifNeg	0.960	30	0.315
	DifPos	0.899	30	0.008

Based on Table V, the results showed that the positive effect in the experimental group is found to be significant (t = 2.900; p < 0.01), with it being higher before treatment. In other words, the positive effect significantly decreases when participants are given the news about COVID-19. Negative affect in the experimental group was not found to decrease when the news was given information about COVID-19 (t = 0.436; p > 0.05). Similar results were also found in positive affect in the control group, using the Wilcoxon test, it was found that positive affect did not significantly decrease after news about COVID-19 was administered (t = 0.622; p > 0.05), which means that only positive affect in the experimental group that was found to be decreased significantly after the COVID-19 news exposure.

In addition, most of the participants in the experimental group were found to have certain experiences with COVID-19 (73 %), such as getting COVID-19 vaccines, doing actions that would prevent further spread of COVID-19, or having relatives and families that had COVID-19 and most of the participants have been informed about COVID-19 through the news (60 %) and social media (30 %). This information about COVID-19 appears to be affecting the participants to remind themselves about their experience when participating in activities that endorse health protocols or vaccines (43.3 %), and also remind themselves that COVID-19 is not gone yet (13.3 %).

TABLE V: PAIRED SAMPLES T-TEST

Group	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean.	95% Confidence Interval of the Difference				
				Lower	Upper			
Experiment								
Pair 1 Negative Affect Pretest – Negative Affect Posttest	0.533	6.699	1.223	-1.968	3.035	0.436	29	0.666
Experiment								
Pair 2 Positive Affect Pretest – Positive Affect Posttest	2.067	3.903	0.713	0.609	3.524	2.900	29	0.007
Kontrol								
Pair 1 Negative Affect Pretest – Negative Affect Posttest	1.567	4.432	0.808	-0.085	3.218	1.940	29	0.062
Kontrol								
Pair 2 Positive Affect Pretest – Positive Affect Posttest	0.500	4.400	0.803	-1.143	2.143	0.622	29	0.539

This study showed that news about COVID-19 has a significant impact on decreasing young adult students' positive affect. This result is in line with previous studies that found information about COVID-19 could have an impact on one's emotional state, but all previous studies gave information about COVID-19 with certain emotional valence in the way it is presented, both negative emotional valence (Balzarotti & Cicero, 2014; Johnston & Davey, 1997; Marin *et al.*, 2012; McIntyre & Gibson, 2016; Szabo & Hopkinson, 2007; Unz *et al.*, 2008; Veitch & Griffitt, 1976) and positive emotional valence (Bazán *et al.*, 2021;

McIntyre & Gibson, 2016; Shekhar, 2021). In this study, we tried to avoid any emotional valence tendencies; we even avoid words often associated with specific emotional valence (Aslam *et al.*, 2020) when designing the stimulus that was given. Because of this, the results of this study showed that news about COVID-19 itself – and not the emotional valence that comes with it – that impact the participants' affect change. Emotion could appear out of written information that did not have any specific emotional valence if the participants have an appropriate personal context toward the information (Grühn & Sharifian, 2016), in this study, it was found that the participants have been either directly or indirectly affected by COVID-19.

The decrease in positive affect is often associated with stress (Rackoff & Newman, 2020). The decrease in positive affect often occurs in people who feel stressed in their daily lives (Eldahan *et al.*, 2016; Van Eck *et al.*, 1998). However, exposure to stress does not exclusively cause the decrease in positive affect, but also the increase in negative affect, as well (Du *et al.*, 2018), which did not occur in this study because the experiment did not result in any significant impact on the participants' negative affect. A more exclusive explanation for this phenomenon is that it is depression and not stress, with the decrease of positive affect having a unique relationship with the occurrence of depression (Forbes & Dahl, 2005). Hence, assumptions about COVID-19 information provided, even without any specific emotional valence in the way it is presented, could impact one's depression rate, especially in young adult students, though this needs further separate review in this study. Many participants found that information about COVID-19 should be the focus of future studies, because the copious amount of news about COVID-19 with negative emotional valence (Aslam *et al.*, 2020) would increase one's negative affect (Balzarotti & Cicero, 2014; Johnston & Davey, 1997; Marin *et al.*, 2012; McIntyre & Gibson, 2016; Szabo & Hopkinson, 2007; Unz *et al.*, 2008; Veitch & Griffitt, 1976), even if the news did not have a negative emotional valence, just like the ones in this study, it would still decrease one's positive affect.

V. Conclusion

Earlier studies have found that COVID-19 information has a significant impact on individual emotional state, but most studies administered COVID-19 information that is nuanced by particular emotional valence, both negative emotional valence (Balzarotti & Cicero, 2014; Johnston & Davey, 1997; Marin *et al.*, 2012; McIntyre & Gibson, 2016; Szabo & Hopkinson, 2007; Unz *et al.*, 2008; Veitch & Griffitt, 1976) or positive emotional valence (Bazán *et al.*, 2021; McIntyre & Gibson, 2016; Shekhar, 2021). This study is attempting to avoid any kind of emotional valence in its stimulus design (i.e., administered COVID-19 information) by not using any words and phrases that have been associated with particular emotional valence according to Aslam *et al.* (2020). The result of this study shows that the COVID-19 information per se is affecting individuals by significantly lowering their positive affect (.007, $p < 0.05$) even though the information itself is devoid of any words or phrases that are potentially provoking particular emotional valence and the topic of the stimuli themselves are non-threatening in nature (e.g. vaccination, diagnostic methods, health protocol).

Diminished positive affect is commonly associated with stress (Rackoff & Newman, 2020) which is often found in participants who are dealing with stress in daily life (Eldahan *et al.*, 2016; Van Eck *et al.*, 1998). However, stress does not exclusively cause diminished positive affect, but it is commonly accompanied by increased negative affect (Du *et al.*, 2018) which is not reproduced in this study. This phenomenon is possibly explained by looking at research on depression instead of stress due to the unique relationship between diminished positive affect without increased negative affect and depression (Forbes & Dahl, 2005). Therefore, this study has found that COVID-19 information, even the neutral ones, has a significant impact on the young adult higher education student population and it is suspected to have an impact on depression levels, even though further studies are necessary to confidently hold this hypothesis. Further studies are also advised to be focused on the effect of COVID-19 information on the wider, general population due to its sheer frequency in the pandemic and post-pandemic era.

VI. Limitations

The study is using convenience sampling technique, any further studies are recommended to use random sampling technique to make the result relevant to the wider general population. The study is also administered online, consequentially making outside variables such as the indoor environment of the participants and stimuli representation through participants' electronic devices vary widely. Further studies are advised to be administered in an offline, uniformed, more controlled setting.

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