Original Research Article | Artikel Penelitian Orisinal

Fluctuations in Neuroticism Due to COVID-19: A Case Study of Four Timelines

[Fluktuasi *Neuroticism* Akibat *COVID-19*: Studi Kasus Empat Lini Masa]

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Neuroticism is a part of the human personality which consists of several negative emotions. The level of neuroticism has a tendency to become unstable, when individuals are faced with a traumatic event, including when the COVID-19 pandemic hit. In order to obtain a more in-depth picture of the fluctuation level of neuroticism (negative emotions), this study measured neuroticism score utilizing the Big Five Inventory-2 (BFI-2) on 1,911 subjects in the age range of 18-25 years. This measurement was carried out longitudinally, with details of measurements on four timelines. All data collection process was carried out by accidental random sampling. This study proves that there is fluctuating trend in each aspect of neuroticism. The aspects of anxiety and neuroticism have a decreasing trend, the aspect of depression has an increasing trend, and the aspect of emotional volatility has a stable trend. The occurrence of these fluctuations proves that COVID-19 affects life aspects of most individuals.

Keywords: anxiety, depression, emotional volatility, neuroticism, COVID-19

Neuroticism merupakan bagian dari kepribadian manusia yang terdiri atas sejumlah emosi negatif. Tingkat *neuroticism* memiliki kecenderungan untuk berubah menjadi tidak stabil, ketika individu dihadapkan pada sebuah peristiwa traumatis, tidak terkecuali ketika pandemi *COVID-19*. Guna memperoleh gambaran yang lebih mendalam mengenai tingkat fluktuasi *neuroticism* (emosi negatif) tersebut, studi ini mengukur skor *neuroticism* menggunakan *Big Five Inventory-2 (BFI-2)* pada 1.911 subjek pada rentang usia 18-25 tahun. Pengukuran ini dilakukan secara longitudinal, dengan rincian pengukuran pada empat lini masa. Seluruh proses pengumpulan data dilakukan dengan *accidental random sampling*. Studi ini membuktikan bahwa terdapat tren fluktuasi pada tiap aspek *neuroticism*. Aspek *anxiety* dan *neuroticism* memiliki tren menurun, aspek *depression* memiliki tren meningkat, dan aspek *emotional volatility* memiliki tren stabil. Terjadinya fluktuasi ini membuktikan bahwa *COVID-19* memengaruhi aspek kehidupan sebagian besar individu.

Kata kunci: kecemasan, depresi, kelabilan emosi, *neuroticism*, *COVID-19*

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Humans are uniquely formed, with various personality characteristics that determine how humans behave, feel, think, and even manage emotions (Shokrkon & Nicoladis, 2021). Personality is one of

Manusia dibentuk secara unik, dengan beragam karakteristik kepribadian yang menentukan bagaimana manusia tersebut berperilaku, beperasaan, berpikir, dan bahkan mengelola emosi (Shokrkon & Nicoladis, 2021).

the internal factors that shapes individual differences in how they respond to situations (Pervin et al., 2010). Neuroticism is an aspect of human personality that includes levels of anxiety, emotional instability, and reactivity to stress (Goldberg, 1981; Goldberg, 1992; John et al., 2008). Every human being's emotions can easily become unstable. Fluctuations in neuroticism (negative emotions) can occur if individuals experience stress or life events that are felt to disturb the comfort of their current conditions (John & Soto, 2007). One life event that can cause fluctuations in neuroticism (negative emotions) is the COVID-19 pandemic that is occurring throughout the world.

Many individuals have had their lives affected by the COVID-19 pandemic, and quite a few have had to experience a number of significant changes (Shokrkon & Nicoladis, 2021). The COVID-19 pandemic has significantly affected the lives of almost all of humanity, both physically and psychologically. The results of the Angus Reid Institute (2020a) survey in 2020 showed that 40% of Canadians admitted to experiencing a decline in mental health; with 10% stating a very poor mental condition. Uncertainty about the future, worries about health, and social isolation are a number of factors that can trigger emotional instability in individuals (Nasrullah & Sulaiman, 2021). The results of another study conducted by the Angus Reid Institute (2020b) prove that due to conditions of isolation, one in five Canadians say they have poor mental health. Fluctuations in neuroticism (negative emotions) caused by the COVID-19 pandemic can have significant consequences for individuals' psychological well-being. Individuals who experience increase or fluctuations in neuroticism (negative emotions) tend to be more susceptible to experiencing more severe symptoms of depression and anxiety (John & Soto, 2007; John et al., 2008). Characteristics like these cause these individuals to tend to have difficulty adapting to changes in situations that have occurred during the COVID-19 pandemic.

There are several studies that show fluctuations in neuroticism (negative emotions) due to the COVID-19 pandemic. A study conducted in China at the start of the COVID-19 pandemic showed that one in four study subjects experienced sleep disorders. In addition, subjects whose age is less than 35 years are more susceptible to anxiety and depression due to thinking

Kepribadian merupakan salah satu faktor internal yang membentuk perbedaan individu dalam caranya merespon situasi (Pervin et al., 2010). *Neuroticism* adalah salah satu aspek kepribadian manusia yang mencakup tingkat kecemasan, ketidakstabilan emosi, dan reaktivitas terhadap stres (Goldberg, 1981; Goldberg, 1992; John et al., 2008). Emosi tiap manusia dapat dengan mudah menjadi tidak stabil. Fluktuasi *neuroticism* (emosi negatif) dapat terjadi jika individu mengalami stres atau peristiwa hidup yang dirasa mengganggu kenyamanan kondisi saat ini (John & Soto, 2007). Salah satu peristiwa hidup yang dapat menyebabkan fluktuasi *neuroticism* (emosi negatif) adalah pandemi *COVID-19* yang terjadi di seluruh dunia.

Banyak individu yang kehidupannya terdampak pandemi *COVID-19*, dan tidak sedikit yang harus mengalami sejumlah perubahan signifikan (Shokrkon & Nicoladis, 2021). Pandemi *COVID-19* telah mempengaruhi kehidupan hampir seluruh umat manusia secara signifikan, baik secara fisik maupun psikologis. Hasil survei Angus Reid Institute (2020a) pada tahun 2020 menunjukkan bahwa 40% warga Kanada mengaku mengalami penurunan kesehatan mental; dengan 10% menyatakan kondisi mental yang sangat buruk. Ketidakpastian tentang masa depan, kekhawatiran tentang kesehatan, dan isolasi sosial adalah sejumlah faktor yang dapat memicu terjadinya ketidakstabilan emosi pada individu (Nasrullah & Sulaiman, 2021). Hasil studi lain yang dilakukan oleh Angus Reid Institute (2020b) membuktikan bahwa karena kondisi terisolasi, satu dari lima masyarakat Kanada menyatakan memiliki kesehatan mental yang tidak baik. Fluktuasi *neuroticism* (emosi negatif) yang disebabkan oleh pandemi *COVID-19* dapat memiliki konsekuensi yang signifikan bagi kesejahteraan psikologis individu. Individu yang mengalami peningkatan atau fluktuasi *neuroticism* (emosi negatif) cenderung lebih rentan mengalami gejala depresi dan kecemasan yang lebih parah (John & Soto, 2007; John et al., 2008). Karakteristik seperti ini menyebabkan individu tersebut cenderung mengalami kesulitan untuk beradaptasi dengan perubahan situasi yang banyak terjadi selama pandemi *COVID-19*.

Terdapat beberapa studi yang menunjukkan adanya fluktuasi *neuroticism* (emosi negatif) akibat pandemi *COVID-19*. Sebuah studi yang dilakukan di China pada awal pandemi *COVID-19* menunjukkan bahwa satu dari empat subjek studi mengalami gangguan tidur. Selain itu, subjek dengan karakteristik usia kurang dari 35 tahun lebih rentan terkena gangguan

too deeply about COVID-19, compared to subjects who are more than 35 years old (Huang & Zhao, 2020). Another study conducted in Canada showed that levels of stress, anxiety, and depression increased during the COVID-19 pandemic, and younger individuals and female subjects tended to be more susceptible to fluctuations in neuroticism (negative emotions; Asmundson & Taylor, 2020). A study in India showed that quarantine and lockdown during the COVID-19 pandemic had a negative impact on people's mental health, with levels of anxiety, depression, and stress increasing during the quarantine period (Chatterjee & Chauhan, 2020).

The data shows that the COVID-19 pandemic has had a significant impact on the emotional well-being of individuals and society as a whole. The phenomenon studied is the existence of significant emotional changes in response to the pandemic. This study seeks to measure and understand the dynamics of fluctuations in neuroticism (negative emotions) over time, especially in the context of the COVID-19 pandemic. A number of specific aspects of neuroticism (anxiety, depression, emotional volatility) are looked at more deeply and comprehensively. Based on this description, the major hypothesis of this study is:

Major Hypothesis: There is a fluctuation in neuroticism (negative emotions) over four timelines due to the COVID-19 pandemic.

Apart from revealing whether there are fluctuations in neuroticism (negative emotions), this study will also discuss each aspect of neuroticism, therefore the minor hypothesis of this study is:

Minor Hypothesis 1: There are fluctuations in anxiety over four timelines due to the COVID-19 pandemic.

Minor Hypothesis 2: There are fluctuations in depression over four timelines due to the COVID-19 pandemic.

Minor Hypothesis 3: There are fluctuations in emotion volatility over four timelines due to the COVID-19 pandemic.

Understanding the fluctuation of neuroticism (negative emotions) and its aspects in individuals during the COVID-19 pandemic is important, especially in studies that specifically discuss the COVID-19 period, because the pandemic creates

kecemasan dan depresi karena memikirkan *COVID-19* terlalu dalam, dibandingkan subjek yang berusia lebih dari 35 tahun (Huang & Zhao, 2020). Studi lain yang dilakukan di Kanada menunjukkan bahwa tingkat stres, kecemasan, dan depresi meningkat selama pandemi *COVID-19*, dan individu yang lebih muda serta subjek perempuan cenderung lebih rentan terhadap fluktuasi *neuroticism* (emosi negatif; Asmundson & Taylor, 2020). Sebuah studi di India menunjukkan bahwa karantina dan *lockdown* selama pandemi *COVID-19* berdampak negatif pada kesehatan mental masyarakat, dengan tingkat kecemasan, depresi, dan stres yang meningkat selama periode karantina (Chatterjee & Chauhan, 2020).

Data tersebut menunjukkan bahwa pandemi *COVID-19* berdampak signifikan pada kesejahteraan emosional individu dan masyarakat secara keseluruhan. Fenomena yang diteliti adalah adanya perubahan emosional yang signifikan sebagai respons terhadap pandemi. Studi ini berusaha mengukur dan memahami dinamika fluktuasi *neuroticism* (emosi negatif) seiring waktu, khususnya dalam konteks pandemi *COVID-19*. Sejumlah aspek spesifik dari *neuroticism* (*anxiety*, *depression*, *emotional volatility*) dilihat lebih dalam dan komprehensif. Berdasarkan uraian tersebut, hipotesis mayor studi ini adalah:

Hipotesis Mayor: Ada terjadi fluktuasi *neuroticism* (emosi negatif) selama empat lini masa akibat pandemi COVID-19.

Selain mengungkapkan ada tidaknya fluktuasi *neuroticism* (emosi negatif), studi ini juga akan membahas pada tiap aspek *neuroticism*, sehingga hipotesis minor studi ini adalah:

Hipotesis Minor 1: Ada terjadi fluktuasi *anxiety* selama empat lini masa akibat pandemi *COVID-19*.

Hipotesis Minor 2: Ada terjadi fluktuasi *depression* selama empat lini masa akibat pandemi *COVID-19*.

Hipotesis Minor 3: Ada terjadi fluktuasi *emotional volatility* selama empat lini masa akibat pandemi *COVID-19*.

Memahami fluktuasi *neuroticism* (emosi negatif) dan aspeknya pada individu selama pandemi *COVID-19* penting untuk dilakukan, terutama dalam studi yang secara khusus membahas pada periode *COVID-19*, karena pandemi tersebut menciptakan situasi stres yang

unusual stressful situations, as well as conditions that have never been experienced. This study can assist individuals cope with stress and maintain psychological well-being during these difficult times. In addition, this study can provide insight into the factors that influence fluctuations in neuroticism (negative emotions), hopefully providing information for individuals to develop effective strategies when experiencing fluctuations in neuroticism (negative emotions).

tidak biasa, dan juga kondisi yang belum pernah dialami. Studi ini dapat membantu individu mengatasi stres dan menjaga kesejahteraan psikologis selama masa sulit tersebut. Selain itu, studi ini dapat menyediakan wawasan tentang faktor yang mempengaruhi fluktuasi *neuroticism* (emosi negatif), dengan harap dapat menyediakan informasi untuk individu dalam mengembangkan strategi yang efektif ketika mengalami fluktuasi *neuroticism* (emosi negatif).

Method

Participants

Study participants are a group of individuals who are the object of observation to answer study or research questions. This study is a longitudinal study with the aim of answering the major hypothesis. The subjects of this study are divided into four groups/periods, according to the time period for data collection, namely: (1) Group/Period 1 "Before COVID-19", which refers to data collection in the time period before the COVID-19 pandemic officially started in Indonesia (October-November 2018); (2) Group/Period 2 "Start of COVID-19", which refers to data collection within the first month of the COVID-19 pandemic officially starting in Indonesia (April 2019); (3) Group/Period 3 "One Year Post-COVID-19", which refers to data collection within a period of one year after the COVID-19 pandemic officially started in Indonesia (March 2020); and (4) Group/Period 4 "COVID-19 Endemic", which refers to data collection in the time period after the COVID-19 pandemic was officially deemed to have ended in Indonesia and the status changed from pandemic to endemic (September 2022-October 2022).

All study groups have the subject characteristics of individuals who are active students from various faculties and universities in Surabaya. The limitations of utilizing longitudinal studies in this study have been anticipated by maintaining uniform subject characteristics in each timeline. This study design was still chosen because its usefulness was felt to be more prominent, namely the ability to generalize to a wider population, as an advantage of the study design.

The sampling method utilized in this study is accidental random sampling, when anyone who finds and/or is provided a link to this study has the opportunity

Metode

Partisipan

Partisipan studi merupakan sekelompok individu yang menjadi objek pengamatan guna menjawab pertanyaan penelitian atau studi. Studi ini merupakan *longitudinal study* dengan tujuan menjawab hipotesis mayor. Subjek studi ini terbagi ke dalam empat kelompok/periode, sesuai dengan rentang waktu pengambilan data, yaitu: (1) Kelompok/Periode 1 "Sebelum *COVID-19*", yang mengacu pada pengambilan data dalam rentang waktu sebelum pandemi *COVID-19* resmi dimulai di Indonesia (Oktober-November 2018); (2) Kelompok/Periode 2 "Awal *COVID-19*", yang mengacu pada pengambilan data dalam rentang waktu bulan awal pandemi *COVID-19* resmi dimulai di Indonesia (April 2019); (3) Kelompok/Periode 3 "Satu Tahun Pasca-*COVID-19*", yang mengacu pada pengambilan data dalam rentang waktu satu tahun setelah pandemi *COVID-19* resmi dimulai di Indonesia (Maret 2020); dan (4) Kelompok/Periode 4 "Endemi *COVID-19*", yang mengacu pada pengambilan data dalam rentang waktu setelah pandemi *COVID-19* resmi dianggap berakhir di Indonesia dan berubah status dari pandemi menjadi endemi (September 2022-Oktober 2022).

Semua kelompok studi memiliki karakteristik subjek yang merupakan mahasiswa aktif dari berbagai fakultas dan universitas yang ada di Surabaya. Adapun limitasi penggunaan *longitudinal study* dalam studi ini telah diantisipasi dengan menjaga karakteristik subjek yang seragam di tiap lini masa. Desain studi tersebut tetap dipilih karena kebermanfaatannya dirasa lebih besar, yaitu kemampuan generalisasi ke populasi yang lebih luas, sebagai kelebihan desain studi.

Metode *sampling* yang digunakan pada studi ini adalah *accidental random sampling*, ketika siapapun yang menemukan dan/atau diberikan tautan studi ini

Table 1
Study Subjects

Code	Group	n	Male (%)	Female (%)
Group/Period 1	"Before COVID-19"	514	26.85	73.15
Group/Period 2	"Start of COVID-19"	346	27.17	72.83
Group/Period 3	"One Year Post-COVID -19"	185	15.14	84.86
Group/Period 4	"COVID-19 Endemic"	866	36.49	63.51

Tabel 1
Subjek Studi

Kode	Kelompok	n	Laki-Laki (%)	Perempuan (%)
Kelompok/Periode 1	"Sebelum *COVID-19*"	514	26,85	73,15
Kelompok/Periode 2	"Awal *COVID-19*"	346	27,17	72,83
Kelompok/Periode 3	"Satu Tahun Pasca-*COVID -19*"	185	15,14	84,86
Kelompok/Periode 4	"Endemi *COVID-19*"	866	36,49	63,51

to become a study subject (Sugiyono, 2016). Based on Table 1, it is known that the total number of subjects in this study was 1,911 individuals. The majority of study subjects were women (60%). All subjects of this study are still active university students, so aged 18 years (12.77%), 19 years (32.34%), 20 years (22.71%), 21 years (26.9%), with the remainder scattered up to a maximum age of 25 years.

Measurement

Personality is a collection of consistent and unique psychological traits that can form individual characteristics (John & Soto, 2007). Personality influences an individual's way of thinking, feeling, and action patterns - including various factors such as temperament, thinking style, level of self-confidence, emotional tendencies, and social interaction style (John & Soto, 2007; John et al., 2008). Personality tends to develop and change over time, through interaction with the environment and life experiences. Personality is also an important aspect in shaping behavior and providing insight into how individuals react to certain situations (John & Soto, 2007; John et al., 2008). In this study, the personality reviewed focuses only on aspects of neuroticism. According to Kristhi and Sukmaningrum (2023), there are conceptual differences between neuroticism (McCrae & Costa, 1999) and neurotic trends (Horney, 1945). Neurotic trends are an individual's attitude as a form of self-defense, while neuroticism is a more general depiction of personality.

Neuroticism is an individual's tendency to often feel negative emotions such as worry, anxiety, anger, depression,

berkesempatan menjadi subjek studi (Sugiyono, 2016). Berdasarkan Tabel 1, diketahui bahwa total jumlah subjek studi ini adalah 1.911 individu. Mayoritas subjek studi adalah perempuan (60%). Seluruh subjek studi ini masih merupakan mahasiswa aktif, sehingga berusia 18 tahun (12,77%), 19 tahun (32,34%), 20 tahun (22,71%), 21 tahun (26,9%), dengan sisanya tersebar hingga maksimal usia 25 tahun.

Pengukuran

Kepribadian adalah kumpulan sifat psikologis yang konsisten dan unik, sehingga dapat membentuk karakteristik individu (John & Soto, 2007). Kepribadian mempengaruhi cara berpikir, cara merasa, dan pola tindakan individu - mencakup berbagai faktor seperti temperamen, gaya berpikir, tingkat kepercayaan diri, kecenderungan emosional, dan gaya interaksi sosial (John & Soto, 2007; John et al., 2008). Kepribadian cenderung berkembang dan berubah seiring waktu, melalui interaksi dengan lingkungan dan pengalaman hidup. Kepribadian juga merupakan aspek penting dalam membentuk perilaku dan memberikan wawasan tentang bagaimana individu bereaksi terhadap situasi tertentu (John & Soto, 2007; John et al., 2008). Pada studi ini, kepribadian yang diulas berfokus hanya pada aspek *neuroticism*. Menurut Kristhi dan Sukmaningrum (2023), terdapat perbedaan konsep antara *neuroticism* (McCrae & Costa, 1999) dan tren neurotik (Horney, 1945). Tren neurotik adalah sikap individu sebagai bentuk pertahanan diri, sedangkan *neuroticism* adalah pada penggambaran kepribadian secara lebih umum.

Neuroticism adalah kecenderungan individu untuk seringkali merasakan emosi negatif seperti khawatir, cemas,

Table 2

Specifications of Big Five Inventory-2 (BFI-2) Neuroticism Aspect

Aspect	Item Number		Item Total	Item Example
	Favorable	Unfavorable		
Anxiety	4	19	2	• I am relaxed, and handle stress well.
Depression	9	24	2	
Emotional Volatility	29	14	2	• I worry a lot.
Total	3	3	6	

Tabel 2

Spesifikasi Big Five Inventory-2 (BFI-2) Aspek Neuroticism

Aspek	Nomor Butir		Jumlah Butir	Contoh Butir
	Favorable	*Unfavorable*		
Anxiety	4	19	2	• Saya seorang yang tenang, mampu menangani stres dengan baik.
Depression	9	24	2	
Emotional Volatility	29	14	2	• Saya seorang yang sering khawatir.
Total Butir	3	3	6	

and have feelings of insecurity and act impulsively (Costa & McCrae, 1992, as cited in Ormel et al., 2004; Diener & Lucas, 2023; John & Srivastava, 1999). Individuals with high neuroticism characteristics tend to feel anxiety, restlessness, sadness, anger, and feelings of depression more easily. Individuals with characteristics like these also tend not to be able to handle stress well. Apart from that, they also tend to act without thinking and have more difficulty controlling themselves. This causes them to respond poorly to the environment and interpret neutral situations as a threat.

In this study, neuroticism will be measured using three behavioral indicators, namely: (1) anxiety; (2) depression; and (3) emotional volatility. Table 2 provides information regarding the specifications of the measuring instruments utilized in this study. Validation results from Ahya and Siaputra (2022) show that the Bahasa Indonesia version of the Big Five Inventory-2 (BFI-2) is a good measuring tool and is ready to be used to measure personality. The results of the internal consistency measurements carried out show that the Cronbach's alpha score is always above .7.

Statistical Analysis

Internal Consistency

One source of validity evidence that is widely used in this study is the source of internal consistency evidence. Azwar (2008) states that reliability can be

marah, depresi, dan memiliki perasaan tidak aman serta bertindak secara impulsif (Costa & McCrae, 1992, sitat dalam Ormel et al., 2004; Diener & Lucas, 2023; John & Srivastava, 1999). Individu dengan karakteristik *neuroticism* tinggi cenderung merasakan kecemasan, kegelisahan, kesedihan, kemarahan, dan perasaan tertekan dengan lebih mudah. Individu dengan karakteristik seperti ini juga cenderung tidak dapat mengatasi stres dengan baik. Selain itu, mereka juga cenderung bertindak tanpa berpikir panjang dan cenderung lebih sulit mengendalikan diri. Hal ini menyebabkan mereka merespon lingkungan dengan buruk dan menafsirkan situasi yang netral sebagai suatu ancaman.

Pada studi ini, *neuroticism* akan diukur menggunakan tiga indikator perilaku, yaitu: (1) kecemasan (*anxiety*); (2) depresi (*depression*); dan (3) kelabilan emosi (*emotional volatility*). Tabel 2 menyediakan informasi sehubungan dengan spesifikasi alat ukur yang digunakan pada studi ini. Hasil validasi dari Ahya dan Siaputra (2022) menunjukkan bahwa *Big Five Inventory-2 (BFI-2)* versi Bahasa Indonesia merupakan alat ukur yang baik dan siap digunakan untuk mengukur kepribadian. Hasil pengukuran konsistensi internal yang dilakukan menunjukkan besaran *Cronbach's alpha* yang selalu di atas 0,7.

Analisis Statistik

Konsistensi Internal

Salah satu sumber bukti validitas yang banyak digunakan pada studi ini adalah sumber bukti konsistensi internal. Azwar (2008) menyatakan bahwa reliabilitas

used to measure the consistency and/or accuracy of measurement results. According to Malhotra et al. (2012) the α coefficient also has the ability to more accurately detect inconsistencies in the indicators being analyzed. Coaley (2010) emphasized that a measuring instrument that has high internal consistency will tend to produce the same results every time the measuring instrument is used. Therefore, a dimension and/or measuring instrument is said to be reliable only if it has a Cronbach's alpha of more than equal to .6 ($\alpha \geq .6$) and all items analyzed have a Corrected Item-Total Correlation (CITC) value of more than or equal to .3 ($CITC \geq .3$; Natalya, 2016).

Descriptive Statistics

Descriptive statistics is a statistical method that aims to present, summarize, and interpret data more effectively and efficiently (Muchson, 2017). This method can provide a comprehensive picture of the data collected in a study (Ghozali, 2018; Muchson, 2017). This statistical analysis is required to obtain information that is clearer and easier to understand. Data is described in terms of mean, minimum, maximum, and standard deviation values (Ghozali, 2018).

One-Way ANOVA

One-Way ANOVA is a statistical analysis method that aims to describe the diversity of data based on predetermined group characteristics (Rice, 2006). This method can test comparisons of mean differences from three or more groups of data, with significant differences if the analysis results show an ANOVA significance level of less than .05.

Results

This study aims to provide an overview of the fluctuations in neuroticism (negative emotions) experienced by university students due to the COVID-19 pandemic. Table 3 and Figure 1 provide information regarding the results of descriptive statistical analysis of the data collected in this study.

Based on Table 3, it is known that the average anxiety experienced by all subjects was 3.71. When compared across four timelines, it is known that the highest

dapat digunakan untuk mengukur konsistensi dan/atau kecermatan hasil pengukuran. Menurut Malhotra et al. (2012) koefisien α juga memiliki kemampuan untuk mendeteksi inkonsistensi yang terdapat pada indikator yang sedang dianalisis secara lebih akurat. Coaley (2010) menegaskan bahwa suatu alat ukur yang memiliki konsistensi internal yang tinggi akan cenderung menghasilkan hasil yang sama tiap kali alat ukur tersebut digunakan. Maka dari itu, suatu dimensi dan/atau alat ukur dikatakan reliabel hanya jika memiliki *Cronbach's alpha* lebih dari sama dengan 0,6 ($\alpha \geq 0,6$) dan semua butir yang dianalisis memiliki nilai *Corrected Item-Total Correlation (CITC)* lebih dari sama dengan 0,3 ($CITC \geq 0,3$; Natalya, 2016).

Statistik Deskriptif

Statistik deskriptif adalah salah satu metode statistik yang bertujuan untuk menyajikan, merangkum, dan menginterpretasikan data secara lebih efektif dan efisien (Muchson, 2017). Metode ini dapat menyediakan gambaran yang menyeluruh terkait data yang berhasil dikumpulkan dalam sebuah studi (Ghozali, 2018; Muchson, 2017). Analisis statistik ini diperlukan untuk mendapatkan informasi yang lebih jelas serta mudah dipahami. Data dideskripsikan dari nilai rerata, minimum, maksimum, dan standar deviasi (Ghozali, 2018).

One-Way ANOVA

One-Way ANOVA merupakan salah satu metode analisis statistik yang bertujuan untuk menguraikan keragaman data berdasarkan karakteristik kelompok yang telah ditentukan (Rice, 2006). Metode ini dapat menguji komparasi perbedaan rerata dari tiga kelompok data atau lebih, dengan perbedaan yang signifikan apabila hasil analisis menunjukkan besaran signifikansi *ANOVA* kurang dari 0,05.

Hasil

Studi ini bertujuan untuk menyediakan gambaran mengenai fluktuasi *neuroticism* (emosi negatif) yang dialami oleh para mahasiswa akibat pandemi *COVID-19*. Tabel 3 dan Gambar 1 menyediakan informasi sehubungan dengan hasil analisis statistik deskriptif dari data yang berhasil dikumpulkan pada studi ini.

Berdasarkan Tabel 3, diketahui bahwa rerata *anxiety* yang dialami oleh seluruh subjek adalah sebesar 3,71. Apabila dibandingkan dalam empat lini masa, maka

Table 3
Descriptive Statistics

Aspect	Group/Period	*N*	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
Anxiety	1	514	1	6	3.83	1
	2	346	1	6	3.83	0.97
	3	185	1	6	3.99	1.13
	4	866	1	6	3.54	1.07
	Total	1911	1	6	3.71	1.05
Depression	1	514	1	6	2.8	1
	2	346	1	5.5	2.79	1.01
	3	185	1	6	3.04	1.06
	4	866	1	6	2.87	1
	Total	1911	1	6	2.85	1.01
Emotional Volatility	1	514	1	6	3.2	1.12
	2	346	1	6	3.2	1.1
	3	185	1	6	3.43	1.15
	4	866	1	6	3.22	1.2
	Total	1911	1	6	3.23	1.16
Neuroticism	1	514	1	5.83	3.28	0.84
	2	346	1	5.83	3.28	0.81
	3	185	1	6	3.49	0.91
	4	866	1	6	3.21	0.87
	Total	1911	1	6	3.27	0.86

Tabel 3
Statistik Deskriptif

Aspek	Kelompok/Periode	*N*	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
Anxiety	1	514	1	6	3,83	1
	2	346	1	6	3,83	0,97
	3	185	1	6	3,99	1,13
	4	866	1	6	3,54	1,07
	Total	1911	1	6	3,71	1,05
Depression	1	514	1	6	2,8	1
	2	346	1	5,5	2,79	1,01
	3	185	1	6	3,04	1,06
	4	866	1	6	2,87	1
	Total	1911	1	6	2,85	1,01
Emotional Volatility	1	514	1	6	3,2	1,12
	2	346	1	6	3,2	1,1
	3	185	1	6	3,43	1,15
	4	866	1	6	3,22	1,2
	Total	1911	1	6	3,23	1,16
Neuroticism	1	514	1	5,83	3,28	0,84
	2	346	1	5,83	3,28	0,81
	3	185	1	6	3,49	0,91
	4	866	1	6	3,21	0,87
	Total	1911	1	6	3,27	0,86

level of anxiety experienced by study subjects occurred in Group/Period 3 "One Year Post-COVID-19", with a

diketahui bahwa tingkat kecemasan tertinggi dialami oleh para subjek studi terjadi pada Kelompok/Periode 3
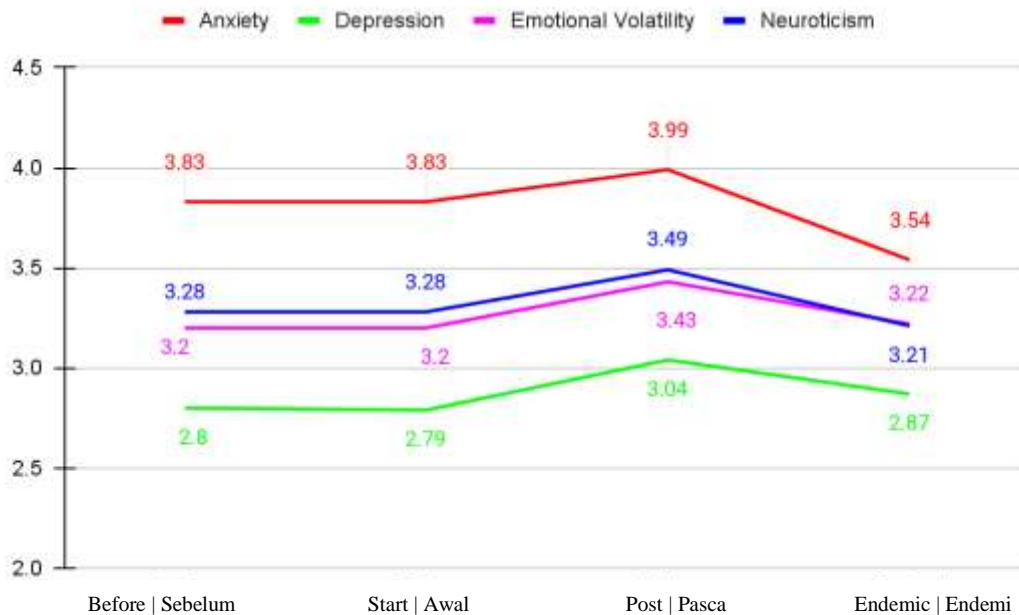
Figure 1. Score fluctuations based on the four timelines.

Gambar 1. Fluktuasi skor berdasarkan empat lini masa.

mean value of 3.99. Based on the data from this study, it is known that the lowest level of anxiety occurred in Group/Period 4 "COVID-19 Endemic", with an average value of 3.54. Therefore, it can be concluded that there are significant fluctuations between Group/Period 2 "Start of COVID-19" to Group/Period 4 "COVID-19 Endemic".

In the depression aspect, it is known that the overall average depression score of the study subjects was 2.85. The highest level of depression was experienced in Group/Period 3 "One Year Post-COVID-19", with a mean value of 3.04. Meanwhile, it was noted in this study data that the subjects' lowest level of depression occurred in Group/Period 2 "Start of COVID-19", with a mean value of 2.79. Thus, it can be concluded that the level of university student depression actually tends to decrease in Group/Period 2 "Start of COVID-19", but experiences a significant spike along with the increasingly frightening spike in COVID-19 cases in Group/Period 3 "One Year Post-COVID-19".

All subjects in this study had an average emotional volatility aspect score of 3.23. The lowest intensity of university students experiencing emotional volatility occurred in Group/Period 1 "Before COVID-19" and Group/Period 2 "Start of COVID-19". This can be seen

"Satu Tahun Pasca-*COVID-19*", dengan nilai rerata sebesar 3,99. Berdasarkan data studi ini, diketahui bahwa tingkat kecemasan terendah terjadi pada Kelompok/Periode 4 "Endemi *COVID-19*", dengan nilai rerata sebesar 3,54. Maka dari itu, dapat disimpulkan bahwa terdapat fluktuasi yang signifikan antara Kelompok/Periode 2 "Awal *COVID-19*" hingga Kelompok/Periode 4 "Endemi *COVID-19*".

Pada aspek *depression*, diketahui bahwa rerata skor depresi subjek studi secara keseluruhan sebesar 2,85. Tingkat depresi tertinggi dialami pada Kelompok/Periode 3 "Satu Tahun Pasca-*COVID-19*", dengan nilai rerata sebesar 3,04. Sementara itu, tercatat pada data studi ini bahwa tingkat depresi terendah subjek terjadi pada Kelompok/Periode 2 "Awal *COVID-19*", dengan nilai rerata sebesar 2,79. Dengan demikian, dapat disimpulkan bahwa tingkat depresi mahasiswa justru cenderung menurun pada Kelompok/Periode 2 "Awal *COVID-19*", namun mengalami lonjakan signifikan seiring lonjakan kasus *COVID-19* yang semakin menakutkan pada Kelompok/Periode 3 "Satu Tahun Pasca-*COVID-19*".

Keseluruhan subjek studi ini memiliki rerata aspek *emotional volatility* sebesar 3,23. Intensitas terendah mahasiswa mengalami kelabilan emosi terjadi pada Kelompok/Periode 1 "Sebelum *COVID-19*" dan Kelompok/Periode 2 "Awal *COVID-19*". Hal ini terlihat

from the average score of the same data, namely 3.20. However, this intensity increased in Group/Period 3 "One Year Post-COVID-19", with the average score being 3.43. It can be concluded that students have found it increasingly difficult to control their emotions after being affected by the COVID-19 pandemic in Group/Period 3 "One Year Post-COVID-19".

The overall mean score of the study subjects on neuroticism was 3.27. These scores tend to be lower than when subjects were measured in Group/Period 3 "One Year Post-COVID-19". After one year of experiencing COVID-19 in Group/Period 3 "One Year Post-COVID-19", subjects tended to frequently feel negative emotions. This can be seen from the average subject score which increased to 3.49. Furthermore, the ability to manage the emotions of the study subjects improved again when COVID-19 also began to subside or in Group/Period 4 "COVID-19 Endemic", when the subjects' average scores fell, even becoming lower than in Group/Period 1 "Before COVID-19", which is 3.21. Therefore, it can be concluded that university students often felt negative emotions when COVID-19 had been around for a long time (in Group/Period 3 "One Year Post-COVID-19"), but then the intensity decreased and even improved (in Group/Period 4 "COVID-19 Endemic").

The fluctuation of the average score in each aspect in each group/period made the authors carry out a more in-depth analysis by carrying out difference testing. Detailed information regarding the results of this analysis is available in Table 4. Based on Table 4, it is known that there are real fluctuations in neuroticism (negative emotions) in the four timelines measured in this study. The authors found significant differences in all aspects, except for the emotional volatility aspect.

Furthermore, the authors compared the average scores for each aspect in each time period. Detailed information regarding the comparison results is available in Table 5. Based on the data obtained, it was found that subjects had a relatively stable average anxiety score in Group/Period 1 "Before COVID-19", Group/Period 2 "Start of COVID-19", and Group/Period 3 "One Year Post-COVID-19", with a decrease in scores occurring in Group/Period 4 "COVID-19 Endemic". In other analysis such as depression, emotional

dari skor rerata data yang sama besar yaitu 3,20. Walaupun demikian, intensitas tersebut mengalami peningkatan pada Kelompok/Periode 3 "Satu Tahun Pasca-*COVID-19*", dengan rerata skor menjadi 3,43. Dapat disimpulkan bahwa mahasiswa jadi semakin sulit mengendalikan emosi setelah terdampak pandemi COVID-19 pada Kelompok/Periode 3 "Satu Tahun Pasca-*COVID-19*".

Skor rerata keseluruhan subjek studi pada *neuroticism* adalah sebesar 3,27. Skor tersebut cenderung lebih rendah dibandingkan ketika subjek diukur pada Kelompok/Periode 3 "Satu Tahun Pasca-*COVID-19*". Setelah satu tahun mengalami COVID-19 pada Kelompok/Periode 3 "Satu Tahun Pasca-*COVID-19*", subjek menjadi cenderung sering merasakan emosi negatif. Hal ini terlihat dari rerata skor subjek yang meningkat menjadi 3,49. Selanjutnya, kemampuan pengelolaan emosi para subjek studi kembali membaik kala COVID-19 juga mulai mereda atau pada Kelompok/Periode 4 "Endemi *COVID-19*", ketika skor rerata subjek turun, bahkan menjadi lebih rendah dari pada Kelompok/Periode 1 "Sebelum *COVID-19*", yaitu sebesar 3,21. Maka dari itu, dapat disimpulkan bahwa mahasiswa menjadi sering merasakan emosi negatif pada saat COVID-19 sudah lama terjadi (pada Kelompok/Periode 3 "Satu Tahun Pasca-*COVID-19*"), namun kemudian intensitas tersebut berkurang dan bahkan menjadi lebih baik (pada Kelompok/Periode 4 "Endemi *COVID-19*").

Adanya fluktuasi skor rerata pada tiap aspek di tiap kelompok/periode membuat penulis melakukan analisis lebih mendalam dengan melakukan uji beda. Informasi detail sehubungan dengan hasil analisis tersebut tersedia dalam Tabel 4. Berdasarkan Tabel 4, diketahui bahwa memang terjadi fluktuasi *neuroticism* (emosi negatif) yang nyata pada empat lini masa yang diukur pada studi ini. Penulis menemukan adanya perbedaan yang signifikan pada semua aspek, kecuali pada aspek *emotional volatility*.

Selanjutnya, penulis melakukan komparasi skor rerata tiap aspek di tiap periode waktu. Informasi detail sehubungan dengan hasil komparasi tersebut tersedia dalam Tabel 5. Berdasarkan pada data yang diperoleh, ditemukan bahwa subjek memiliki skor rerata kecemasan yang relatif stabil pada Kelompok/Periode 1 "Sebelum *COVID-19*", Kelompok/Periode 2 "Awal *COVID-19*", dan Kelompok/Periode 3 "Satu Tahun Pasca-*COVID-19*", dengan penurunan skor terjadi pada Kelompok/Periode 4 "Endemi *COVID-19*". Pada

Table 4
ANOVA Test Results

Aspect	Sig. Levene	F	Sig. ANOVA	Conclusion
Anxiety	0.206	15.4	0	Significant
Depression	0.935	2.89	0.034	Significant
Emotional Volatility	0.493	2.01	0.109	Not Significant
Neuroticism	0.172	5.37	0.001	Significant

Tabel 4
Hasil Uji Beda ANOVA

Aspek	Sig. Levene	F	Sig. ANOVA	Simpulan
Anxiety	0,206	15,4	0	Ada Perbedaan
Depression	0,935	2,89	0,034	Ada Perbedaan
Emotional Volatility	0,493	2,01	0,109	Tidak Ada Perbedaan
Neuroticism	0,172	5,37	0,001	Ada Perbedaan

volatility, and neuroticism, it can be seen that subjects experienced differences in mean scores in Group/Period 3 "One Year Post-COVID-19", when the subjects' scores increased significantly. However, this increase eventually decreased when COVID-19 was declared a non-lethal disease in Group/Period 4 "COVID-19 Endemic".

analisis lain seperti *depression*, *emotional volatility*, dan *neuroticism*, terlihat bahwa subjek mengalami perbedaan skor rerata pada Kelompok/Periode 3 "Satu Tahun Pasca-*COVID-19*", ketika skor subjek meningkat secara signifikan. Walaupun demikian, peningkatan tersebut akhirnya mengalami penurunan, ketika COVID-19 dinyatakan sebagai penyakit tidak berbahaya pada Kelompok/Periode 4 "Endemi *COVID-19*".

Discussion

Neuroticism is a characteristic of personality that is often associated with an individual's tendency to feel negative emotions such as anxiety, fear, and sadness (Goldberg, 1981; Goldberg, 1992; John et al., 2008). During the COVID-19 pandemic, many individuals admit to experiencing anxiety, stress, and even depression due to increased neuroticism. Several studies have been conducted to prove the existence of fluctuations in neuroticism (negative emotions) due to the COVID-19 pandemic. This study wants to provide a discussion of fluctuations in neuroticism (negative emotions) in four timelines.

The results of the four timelines study on negative emotional aspects show fluctuations with different trends. There are aspects that experience an increasing trend, a decreasing trend, and there are also those that tend to be stable. This trend can be seen from the red line in Figure 2. A decreasing trend occurs in anxiety and neuroticism, an increasing trend occurs in depression, and a stable trend occurs in emotional volatility.

Diskusi

Neuroticism merupakan salah satu karakteristik kepribadian yang seringkali dihubungkan dengan kecenderungan individu untuk merasakan emosi negatif seperti kecemasan, ketakutan, dan kesedihan (Goldberg, 1981; Goldberg, 1992; John et al., 2008). Selama pandemi *COVID-19*, banyak individu mengakui mengalami kecemasan, stres, dan bahkan depresi yang diakibatkan meningkatnya *neuroticism*. Beberapa studi telah dilakukan guna membuktikan adanya fluktuasi *neuroticism* (emosi negatif) akibat pandemi *COVID-19*. Studi ini ingin menyediakan pembahasan mengenai fluktuasi *neuroticism* (emosi negatif) dalam empat lini masa.

Hasil studi empat lini masa pada aspek emosi negatif menunjukkan adanya fluktuasi dengan tren yang berbeda. Terdapat aspek yang mengalami tren peningkatan, tren penurunan, dan ada juga yang cenderung stabil. Tren tersebut dapat dilihat dari garis merah yang terdapat pada Gambar 2. Tren penurunan terjadi pada *anxiety* dan *neuroticism*, tren peningkatan terjadi pada *depression*, dan tren stabil terjadi pada *emotional volatility*.

Table 5
Multiple Comparisons Results

Aspect	Periode	*d*	*Sig.*	Simpulan
Anxiety	Before COVID-19 - Start of COVID-19	0	0.986	Not Significant
	Before COVID-19 - One Year Post-COVID-19	- 0.16	0.082	Not Significant
	Before COVID-19 - COVID-19 Endemic	0.29	0	Significant
	Start of COVID-19 - One Year Post-COVID-19	- 0.16	0.099	Not Significant
	Start of COVID-19 - COVID-19 Endemic	0.29	0	Significant
	One Year Post-COVID-19 - COVID-19 Endemic	0.44	0	Significant
Depression	Before COVID-19 - Start of COVID-19	0.01	0.837	Not Significant
	Before COVID-19 - One Year Post-COVID-19	- 0.23	0.007	Significant
	Before COVID-19 - COVID-19 Endemic	- 0.05	0.346	Not Significant
	Start of COVID-19 - One Year Post-COVID-19	- 0.24	0.007	Significant
	Start of COVID-19 - COVID-19 Endemic	- 0.07	0.294	Not Significant
	One Year Post-COVID-19 - COVID-19 Endemic	0.19	0.028	Significant
Emotional Volatility	Before COVID-19 - Start of COVID-19	0	0.995	Not Significant
	Before COVID-19 - One Year Post-COVID-19	- 0.22	0.021	Significant
	Before COVID-19 - COVID-19 Endemic	- 0.02	0.714	Not Significant
	Start of COVID-19 - One Year Post-COVID-19	- 0.22	0.03	Significant
	Start of COVID-19 - COVID-19 Endemic	- 0.02	0.753	Not Significant
	One Year Post-COVID-19 - COVID-19 Endemic	- 0.2	0.029	Significant
Neuroticism	Before COVID-19 - Start of COVID-19	0	0.931	Not Significant
	Before COVID-19 - One Year Post-COVID-19	- 0.2	0.005	Significant
	Before COVID-19 - COVID-19 Endemic	0.07	0.142	Not Significant
	Start of COVID-19 - One Year Post-COVID-19	- 0.21	0.007	Significant
	Start of COVID-19 - COVID-19 Endemic	0.06	0.234	Not Significant
	One Year Post-COVID-19 - COVID-19 Endemic	- 0.28	0	Significant

Through a more in-depth review, it was discovered that the decrease in the average subject's anxiety between Group/Period 1 "Before COVID-19" to Group/Period 4 "COVID-19 Endemic" had a difference of 0.29. Before reaching the timeline for Group/Period 4 "COVID-19 Endemic", there were fluctuations in anxiety levels, from Group/Period 3 "One Year Post-COVID-19" to Group/Period 4 "COVID-19 Endemic", there was a decrease of 0.45 points, but after an increase in anxiety of 0.16 points. This increase occurred due to widespread information regarding the increase in COVID-19 cases through social media, which made people increasingly worried about the tense conditions of uncertainty (Gao et al., 2020). This condition is exacerbated by the mandatory self-isolation issued by the government of the Republic of Indonesia, in order to reduce the number of COVID-19 cases (Brooks et al., 2020). According to Kindred and Bates (2023), this also triggers an increase in negative emotions within oneself, especially in individuals who have high sensitivity to anxiety, have poor coping strategies, and have a low level of resilience to stress. Furthermore, the average level of

Melalui peninjauan lebih mendalam, diketahui bahwa penurunan rerata kecemasan subjek antara pada Kelompok/Periode 1 "Sebelum *COVID-19*" sampai Kelompok/Periode 4 "Endemi *COVID-19*" memiliki selisih sebanyak 0,29. Sebelum mencapai lini masa Kelompok/Periode 4 "Endemi *COVID-19*" terdapat fluktuasi tingkat kecemasan, ketika pada Kelompok/Periode 3 "Satu Tahun Pasca-*COVID-19*" ke Kelompok/Periode 4 "Endemi *COVID-19*" terjadi penurunan 0,45 poin, namun sebelumnya terjadi peningkatan kecemasan sebesar 0,16 poin. Peningkatan ini terjadi karena maraknya informasi mengenai peningkatan kasus *COVID-19* melalui media sosial, yang membuat masyarakat menjadi semakin khawatir dengan kondisi ketidakpastian yang mencekam tersebut (Gao et al., 2020). Kondisi ini diperparah dengan kewajiban isolasi mandiri yang dikeluarkan oleh pemerintah Republik Indonesia, demi menekan angka kasus *COVID-19* (Brooks et al., 2020). Menurut Kindred dan Bates (2023), hal ini turut memicu peningkatan emosi negatif dalam diri, terutama pada individu yang memiliki sensitivitas tinggi terhadap kecemasan, memiliki strategi *coping* yang buruk, dan memiliki tingkat resiliensi terhadap

Tabel 5
Hasil Uji Multiple Comparisons

Aspek	Periode	d	Sig.	Simpulan
Anxiety	Sebelum *COVID-19* - Awal *COVID-19*	0	0,986	Tidak Ada Perbedaan
	Sebelum *COVID-19* - Satu Tahun Pasca-*COVID-19*	- 0,16	0,082	Tidak Ada Perbedaan
	Sebelum *COVID-19* - Endemi *COVID-19*	0,29	0	Ada Perbedaan
	Awal *COVID-19* - Satu Tahun Pasca-*COVID-19*	- 0,16	0,099	Tidak Ada Perbedaan
	Awal *COVID-19* - Endemi *COVID-19*	0,29	0	Ada Perbedaan
	Satu Tahun Pasca-*COVID-19* - Endemi *COVID-19*	0,44	0	Ada Perbedaan
Depression	Sebelum *COVID-19* - Awal *COVID-19*	0,01	0,837	Tidak Ada Perbedaan
	Sebelum *COVID-19* - Satu Tahun Pasca-*COVID-19*	- 0,23	0,007	Ada Perbedaan
	Sebelum *COVID-19* - Endemi *COVID-19*	- 0,05	0,346	Tidak Ada Perbedaan
	Awal *COVID-19* - Satu Tahun Pasca-*COVID-19*	- 0,24	0,007	Ada Perbedaan
	Awal *COVID-19* - Endemi *COVID-19*	- 0,07	0,294	Tidak Ada Perbedaan
	Satu Tahun Pasca-*COVID-19* - Endemi *COVID-19*	0,19	0,028	Ada Perbedaan
Emotional Volatility	Sebelum *COVID-19* - Awal *COVID-19*	0	0,995	Tidak Ada Perbedaan
	Sebelum *COVID-19* - Satu Tahun Pasca-*COVID-19*	- 0,22	0,021	Ada Perbedaan
	Sebelum *COVID-19* - Endemi *COVID-19*	- 0,02	0,714	Tidak Ada Perbedaan
	Awal *COVID-19* - Satu Tahun Pasca-*COVID-19*	- 0,22	0,03	Ada Perbedaan
	Awal *COVID-19* - Endemi *COVID-19*	- 0,02	0,753	Tidak Ada Perbedaan
	Satu Tahun Pasca-*COVID-19* - Endemi *COVID-19*	- 0,2	0,029	Ada Perbedaan
Neuroticism	Sebelum *COVID-19* - Awal *COVID-19*	0	0,931	Tidak Ada Perbedaan
	Sebelum *COVID-19* - Satu Tahun Pasca-*COVID-19*	- 0,2	0,005	Ada Perbedaan
	Sebelum *COVID-19* - Endemi *COVID-19*	0,07	0,142	Tidak Ada Perbedaan
	Awal *COVID-19* - Satu Tahun Pasca-*COVID-19*	- 0,21	0,007	Ada Perbedaan
	Awal *COVID-19* - Endemi *COVID-19*	0,06	0,234	Tidak Ada Perbedaan
	Satu Tahun Pasca-*COVID-19* - Endemi *COVID-19*	- 0,28	0	Ada Perbedaan

anxiety decreased by 0.45 points in Group/Period 4 "COVID-19 Endemic", because the public's perception of COVID-19 as a dangerous disease outbreak has changed to a disease that is considered common. This change in perception was created due to information from social media which intensively stated that the distribution of COVID-19 cases had stabilized at a low level. This is what has led to a reduction in public perception of the conditions of uncertainty caused by COVID-19 (Calvete & Connor-Smith, 2006). Indirectly, this is what caused the decrease in anxiety in Group/Period 4 "COVID-19 Endemic".

Exposure to information regarding the high increase in COVID-19 cases not only has an impact on increasing people's anxiety, but also affects their depression levels. This can be seen from the increase in the average depression score in Group/Period 3 "One Year Post-COVID-19", namely by 0.25 points from Group/Period 2 "Start of COVID-19" (μ_{early} = 2.79; μ_{1year} = 3.04). This increase in depression is also influenced

stres yang rendah. Selanjutnya, tingkat rerata kecemasan tersebut mengalami penurunan sebanyak 0,45 poin pada Kelompok/Periode 4 "Endemi *COVID-19*", karena persepsi masyarakat terhadap *COVID-19* sebagai wabah penyakit yang berbahaya telah berubah menjadi sebuah penyakit yang dianggap umum. Perubahan persepsi ini tercipta karena adanya informasi dari media sosial yang gencar menyatakan bahwa persebaran kasus *COVID-19* telah stabil rendah. Hal inilah yang menyebabkan pengurangan persepsi masyarakat terhadap kondisi ketidakpastian yang disebabkan oleh *COVID-19* (Calvete & Connor-Smith, 2006). Secara tidak langsung, hal inilah yang menyebabkan penurunan kecemasan di Kelompok/Periode 4 "Endemi *COVID-19*".

Paparan informasi mengenai tingginya peningkatan kasus *COVID-19* tidak hanya berdampak pada peningkatan kecemasan masyarakat, namun juga mempengaruhi tingkat depresi mereka. Hal ini dapat dilihat dari adanya peningkatan skor rerata depresi pada Kelompok/Periode 3 "Satu Tahun Pasca-*COVID-19*", yaitu sebanyak 0,25 poin dari Kelompok/Periode 2 "Awal *COVID-19*" (μ_{early} = 2,79 ; μ_{1year} = 3,04). Peningkatan
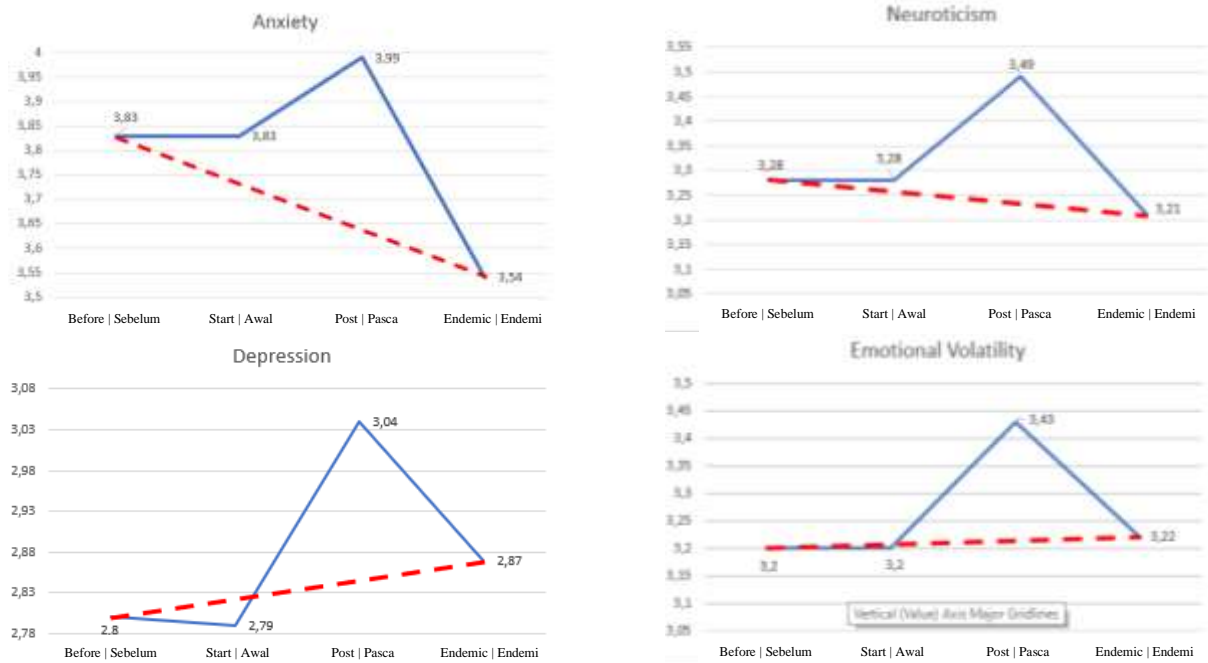
Figure 2. Visualization based on the trend pattern of the four timelines.

Gambar 2. Visualisasi berdasarkan pola tren empat lini masa.

by the conditions of uncertainty experienced by society when COVID-19 cases experienced a sharp increase (Xiong et al., 2020; Rudenstine et al., 2021). This condition forced the government of the Republic of Indonesia to issue self-isolation regulations for the entire community, so that COVID-19 cases do not increase. However, conditions like this make people more vulnerable to various mental problems, one of which is depression (Xiong et al., 2020; Brooks et al., 2020). This has a significant impact, especially on certain individuals who have a high sensitivity to depression. Based on a study conducted by Wang et al. (2021), there is a correlation between vulnerability to depression and self-isolation during the COVID-19 pandemic, which resulted in individuals not being able to go out to work as usual. In addition, the study results of Wang et al. (2021) can also be used to explain why there was a decrease in people's depression levels by 0.17 points, when entering Group/Period 4 "COVID-19 Endemic". This is because in Group/Period 4 "COVID-19 Endemic", people can return to their free activities as in Group/Period 1 "Before COVID-19". However, the level of depression in society has not completely improved, because it has an upward trend of 0.07 points from Group/Period 1 "Before COVID-19". This trend of increasing levels of depression can occur due to many things that have occurred as a result

depresi ini juga dipengaruhi oleh kondisi ketidak-pastian yang dialami oleh masyarakat saat kasus *COVID-19* mengalami peningkatan tajam (Xiong et al., 2020; Rudenstine et al., 2021). Kondisi tersebut memaksa pemerintah Republik Indonesia untuk mengeluarkan peraturan isolasi mandiri bagi seluruh masyarakat, agar kasus *COVID-19* tidak semakin meningkat. Akan tetapi, kondisi seperti itu membuat masyarakat menjadi lebih rentan terhadap berbagai permasalahan mental, salah satunya adalah depresi (Xiong et al., 2020; Brooks et al., 2020). Hal ini berdampak secara signifikan terutama pada individu tertentu yang memiliki sensitivitas tinggi terhadap depresi. Berdasarkan studi yang dilakukan Wang et al. (2021), ditemukan adanya korelasi antara kerentanan depresi dengan isolasi mandiri selama pandemi *COVID-19* yang mengakibatkan individu tidak dapat keluar bekerja seperti biasanya. Selain itu, hasil studi Wang et al. (2021) juga dapat digunakan untuk menjelaskan mengapa terjadi penurunan tingkat depresi masyarakat sebanyak 0,17 poin, ketika memasuki Kelompok/Periode 4 "Endemi *COVID-19*". Hal ini dikarenakan pada Kelompok/Periode 4 "Endemi *COVID-19*", masyarakat dapat kembali beraktivitas secara bebas seperti di kala Kelompok/ Periode 1 "Sebelum *COVID-19*". Akan tetapi, tingkat depresi pada masyarakat tidak sepenuhnya membaik, karena memiliki tren kenaikan sebesar 0,07 poin dari

of COVID-19, for example the loss of family members, grieving due to a loved one dying due to COVID-19, sudden job loss, the socio-economic condition of society becoming unstable, etc. (Xiong et al., 2020; Li & Wang, 2020).

Apart from having an impact on changes in levels of anxiety and depression, the self-isolation regulations set by the government of the Republic of Indonesia also affect the level of emotional volatility in society. The self-isolation regulations that have been set make people feel limited in terms of interactions with others, thus triggering the emergence of various kinds of disorders, one of which is emotional disorders (Wang et al., 2021; Brooks et al., 2020). This is evident from the increase in the average emotional volatility score from Group/Period 1 "Before COVID-19" to Group/Period 3 "One Year Post-COVID-19" by 0.23 points. In their study, Saladino et al. (2020) described emotional instability such as difficulty concentrating, often feeling bored, becoming irritable, restless, nervous, worried, and lonely during the period of self-isolation. The emergence of emotional instability can be caused by individuals' difficulty in interacting with other individuals face to face (Hong et al., 2021; Brooks et al., 2020). The results of a study by Saladino et al. (2020) and Hong et al. (2021) were proven to be true because in Group/Period 4 "COVID-19 Endemic", when society was free again, there was a decrease of 0.21 in the average emotional volatility.

Overall, the COVID-19 pandemic has had a huge impact on people's mental health conditions. This impact is also influenced by the high or low level of neuroticism possessed by each individual (Khosravi, 2020). Khosravi (2020) stated that an individual's level of neuroticism actually determines how the individual will perceive the real conditions of the ongoing COVID-19 pandemic. Individuals with high levels of neuroticism will tend to search for the latest information about COVID-19 on social media more often, so they tend to be more easily affected by negative impacts on their psychology (Khosravi, 2020). The study by Zajenkowski et al. (2020) and Harper et al. (2021) also found that individuals with high neuroticism tend to implement behaviors that can prevent them from contracting COVID-19, such as practicing strict social distancing, washing their hands

Kelompok/Periode 1 "Sebelum *COVID-19*". Tren kenaikan tingkat depresi ini dapat terjadi karena banyak hal yang melanda akibat *COVID-19*, misalnya kehilangan anggota keluarga, berduka akibat individu yang dikasihi meninggal karena *COVID-19*, kehilangan pekerjaan secara mendadak, kondisi socioekonomi masyarakat yang menjadi tidak stabil, dan lain-lain (Xiong et al., 2020; Li & Wang, 2020).

Selain memberikan dampak perubahan pada tingkat kecemasan dan depresi, peraturan isolasi mandiri yang ditetapkan oleh pemerintah Republik Indonesia juga mempengaruhi tingkat kelabilan emosi masyarakat. Peraturan isolasi mandiri yang ditetapkan membuat masyarakat merasa dibatasi dalam hal interaksi dengan sesama, sehingga memicu munculnya berbagai macam gangguan, salah satunya adalah gangguan emosi (Wang et al., 2021; Brooks et al., 2020). Hal ini terbukti dari adanya peningkatan rerata skor *emotional volatility* dari Kelompok/Periode 1 "Sebelum *COVID-19*" hingga ke Kelompok/Periode 3 "Satu Tahun Pasca-*COVID-19*" sebesar 0,23 poin. Dalam studinya, Saladino et al. (2020) menggambarkan adanya ketidakstabilan emosi seperti kesulitan dalam berkonsentrasi, sering merasa bosan, menjadi mudah marah, tidak tenang, gugup, khawatir, dan kesepian selama periode isolasi mandiri. Munculnya ketidakstabilan emosi ini dapat disebabkan karena kesulitan individu untuk berinteraksi dengan individu lain secara tatap muka langsung (Hong et al., 2021; Brooks et al., 2020). Hasil studi oleh Saladino et al. (2020) dan Hong et al. (2021) ini terbukti benar karena pada Kelompok/Periode 4 "Endemi *COVID-19*", saat masyarakat kembali bebas, terdapat penurunan sebanyak 0,21 pada rerata *emotional volatility*.

Secara keseluruhan, pandemi *COVID-19* memberikan dampak yang sangat besar terhadap kondisi kesehatan mental masyarakat. Dampak tersebut juga dipengaruhi oleh tinggi-rendahnya tingkat *neuroticism* yang dimiliki oleh tiap individu (Khosravi, 2020). Khosravi (2020) menyatakan bahwa sebenarnya tingkat *neuroticism* individu menentukan bagaimana individu akan mempersepsikan kondisi nyata dari pandemi *COVID-19* yang sedang berlangsung. Individu dengan tingkat *neuroticism* yang tinggi akan cenderung lebih sering mencari informasi terbaru dari *COVID-19* di media sosial, sehingga mereka cenderung lebih mudah terkena dampak negatif pada psikis mereka (Khosravi, 2020). Studi oleh Zajenkowski et al. (2020) dan Harper et al. (2021) juga menemukan bahwa individu dengan *neuroticism* yang tinggi cenderung akan menerapkan perilaku yang dapat mencegah mereka dari terjangkit

frequently, and wearing masks. According to Arli (2023), there are many reasons why individuals comply or do not comply with health regulations, especially during the COVID-19 pandemic.

This form of behavior of neuroticism is proven by an increase in the mean neuroticism score of 0.12 from Group/Period 2 "Start of COVID-19" to Group/Period 3 "One Year Post-COVID-19", when there was a drastic increase in the spread of COVID-19 cases. This behavior decreased by 0.28 points in Group/Period 4 "COVID-19 Endemic", when cases of the spread of COVID-19 had become more stable. This proves that there is a decrease in the level of neuroticism in society. In line with the results of a survey conducted in early January 2023 with a target of 1,221 respondents aged over 17 years, the results showed that 10.7% of respondents very rarely and 30.2% of respondents rarely used masks when leaving the house (Lembaga Survey Indonesia [LSI], n.d., as cited in Annur, 2023). The survey also showed that 10.1% of the public thought that masks were no longer necessary (Lembaga Survey Indonesia [LSI], n.d., as cited in Annur, 2023). This perception and behavior is supported by the relaxation of the mask policy which has been officially decided by the government of the Republic of Indonesia (Rani, 2022). Therefore, it can be concluded that the results of Lembaga Survey Indonesia (LSI; as cited in Annur, 2023) support the findings of this study, which state that indeed in Group/Period 4 "COVID-19 Endemic", the level of neuroticism in the majority of society has improved.

The information in this study provides results that support the importance of understanding and maintaining mental health, especially in the midst of a global pandemic. By highlighting fluctuations in neuroticism (negative emotions) and the impact of the pandemic on neuroticism, anxiety, and depression, this study shows the need for attention to mental health as an integral part of the response to a health crisis. Thus, the results of this study provide valuable insight into the complexity and variation in people's emotional responses to situations of crisis and suggest that efforts to safeguard mental health need to be of greater priority in public health responses.

COVID-19, seperti melakukan *social distancing* secara ketat, rajin mencuci tangan, dan memakai masker. Menurut Arli (2023), ada terdapat banyak alasan mengapa individu mematuhi atau justru tidak mematuhi peraturan kesehatan, terutama di kala masa pandemi *COVID-19*.

Bentuk perilaku *neuroticism* ini terbukti dari adanya peningkatan skor rerata *neuroticism* sebanyak 0,12 dari Kelompok/Periode 2 "Awal *COVID-19*" hingga Kelompok/Periode 3 "Satu Tahun Pasca-*COVID-19*", ketika terjadi peningkatan drastis penyebaran kasus *COVID-19*. Perilaku tersebut mengalami penurunan sebanyak 0,28 poin pada Kelompok/Periode 4 "Endemi *COVID-19*", ketika kasus penyebaran *COVID-19* sudah menjadi lebih stabil. Hal ini membuktikan bahwa terdapat penurunan tingkat *neuroticism* pada masyarakat. Sejalan dengan hasil survei yang dilakukan pada awal Januari 2023 dengan sasaran 1.221 responden berusia lebih dari 17 tahun, hasil menunjukkan bahwa 10,7% responden sudah sangat jarang dan 30,2% responden jarang menggunakan masker saat keluar rumah (Lembaga Survei Indonesia [LSI], n.d., sitat dalam Annur, 2023). Survei tersebut juga menunjukkan hasil bahwa 10,1% masyarakat berpendapat bahwa masker sudah sangat tidak diperlukan (Lembaga Survei Indonesia [LSI], n.d., sitat dalam Annur, 2023). Persepsi dan perilaku ini ditunjang dengan adanya pelonggaran kebijakan penggunaan masker yang telah diputuskan secara resmi oleh pemerintah Republik Indonesia (Rani, 2022). Maka dari itu, dapat disimpulkan bahwa hasil survei Lembaga Survei Indonesia (LSI; sitat dalam Annur, 2023) mendukung temuan studi ini, yang menyatakan bahwa memang pada Kelompok/ Periode 4 "Endemi *COVID-19*", tingkat *neuroticism* masyarakat mayoritas sudah mengalami perbaikan.

Informasi dalam studi ini menyediakan hasil yang mendukung pentingnya memahami dan menjaga kesehatan mental, terutama di tengah kondisi pandemi global. Dengan menyoroti fluktuasi *neuroticism* (emosi negatif) dan dampak pandemi pada *neuroticism*, kecemasan, dan depresi, studi ini menunjukkan perlunya perhatian terhadap kesehatan mental sebagai bagian integral dari respons terhadap krisis kesehatan. Dengan demikian, hasil studi ini menyediakan wawasan yang berharga sehubungan kompleksitas dan variasi respons emosional masyarakat terhadap situasi krisis dan menunjukkan bahwa upaya menjaga kesehatan mental perlu menjadi prioritas yang lebih besar dalam tanggapan kesehatan masyarakat.

Limitations and Suggestions

The fundamental limitation of this study is that the subjects from each timeline are different groups of subjects and their continuity was not checked. Therefore, for future studies, the authors suggest looking at fluctuations in aspects of human personality (especially neuroticism) in a time series study.

Conclusion

Based on the presentation of the results of the study of fluctuations in neuroticism (negative emotions) in these four timelines, it is known that there are different fluctuation trends for each aspect of neuroticism. The anxiety and neuroticism aspects have a decreasing trend, the depression aspect has an increasing trend (although small), the emotional volatility aspect has a stable trend.

Many factors influence fluctuations in neuroticism (negative emotions) in individuals during the COVID-19 pandemic. One prominent factor that is believed to be the cause of these fluctuations is the variety of information spread on social media that cannot be controlled. Apart from that, the obligation to self-isolate also worsened the condition of emotional stability during the COVID-19 pandemic.

It is hoped that the results of this study can contribute to science so that they can be used as a basis for developing intervention strategies and preventing the ongoing negative impact of COVID-19. The key implications of this study are: (1) There is a need to educate the public about how to filter information from/on social media selectively and wisely; (2) It is important to provide mental health education and promote adaptive coping strategies to help overcome various negative emotions that may be felt due to the COVID-19 pandemic; (3) For the government, it is important to pay attention to the policies taken in handling COVID-19 cases, so that it not only pays attention to medical aspects but also takes into account the psychological aspects of society. In the long term, it is necessary to think about a more comprehensive series of mental health intervention programs so that society can be prepared to face situations of crisis that may occur suddenly.

Publication Disclosure Statement for Conflict of Interest

The authors disclose that there are no known conflicts

Keterbatasan dan Saran

Kelemahan mendasar dari studi ini adalah subjek dari tiap lini masa merupakan kelompok subjek yang berbeda dan tidak diperiksa kesinambungannya. Maka dari itu, untuk studi selanjutnya, penulis menyarankan untuk melihat fluktuasi aspek kepribadian (khususnya *neuroticism*) manusia secara *time series study*.

Simpulan

Berdasarkan pemaparan hasil studi fluktuasi *neuroticism* (emosi negatif) pada empat lini masa ini, diketahui bahwa terdapat tren fluktuasi yang berbeda dari tiap aspek *neuroticism*. Aspek *anxiety* dan *neuroticism* memiliki tren menurun, aspek *depression* memiliki tren meningkat (walaupun kecil), aspek *emotional volatility* memiliki tren cenderung stabil.

Banyak faktor yang memengaruhi fluktuasi *neuroticism* (emosi negatif) pada individu selama pandemi *COVID-19*. Salah satu faktor menonjol yang diyakini menjadi penyebab fluktuasi tersebut adalah beragamnya informasi yang tersebar di sosial media yang tidak dapat dikontrol. Selain itu, kewajiban isolasi mandiri juga turut memperburuk kondisi kestabilan emosi selama pandemi *COVID-19*.

Hasil studi ini diharapkan dapat memberikan sumbangsih bagi ilmu pengetahuan agar dapat dijadikan landasan untuk mengembangkan strategi intervensi dan pencegahan dampak negatif berkelanjutan dari *COVID-19*. Implikasi kunci dari studi ini adalah: (1) Perlu adanya edukasi kepada masyarakat tentang bagaimana menyaring informasi dari/di sosial media secara selektif dan bijaksana; (2) Penting adanya edukasi kesehatan mental dan promosi strategi *coping* yang adaptif untuk membantu mengatasi berbagai emosi negatif yang mungkin dirasakan akibat pandemi *COVID-19*; (3) Bagi pemerintah, penting memperhatikan kebijakan yang diambil dalam penanganan kasus *COVID-19*, sehingga tidak hanya memperhatikan aspek medis namun juga aspek psikologis masyarakat turut diperhitungkan. Dalam jangka panjang, perlu dipikirkan rangkaian program intervensi kesehatan mental yang lebih menyeluruh agar masyarakat dapat siap menghadapi situasi krisis yang mungkin saja terjadi secara tiba-tiba.

Pernyataan Publikasi Sehubungan Dengan Konflik Kepentingan

Penulis mengungkapkan bahwa tidak ada konflik

of interest related to the publication of the results of this study. There was no significant financial support of this study that could have influenced the outcome.

kepentingan yang diketahui terkait dengan publikasi hasil studi ini. Tidak ada dukungan finansial yang signifikan atas studi ini yang dapat memengaruhi hasil.

Acknowledgment

The authors thank the reviewers for their scientific expertise and willingness to ensure the quality of publication of this study. The authors also thank the university students who helped with the data collection process, ensuring data with good integrity.

Ucapan Terima Kasih

Penulis berterima kasih pada para mitra bestari atas keahlian ilmiah dan kesediaannya dalam menjamin kualitas publikasi studi ini. Penulis juga berterima kasih pada para mahasiswa yang telah membantu proses pengambilan data, sehingga dapat menghasilkan data dengan integritas baik.

References

Ahya, A., & Siaputra, I. B. (2022). Validasi Big Five Inventory-2 (BFI-2) untuk Indonesia: Belum sempurna tapi valid dan reliabel mengukur kepribadian [Validation of Big Five Inventory-2 (BFI-2) for Indonesia: Not perfect but still valid and reliable to measure personality]. *Jurnal Psikologi Ulayat: Indonesian Journal of Indigenous Psychology, 9*(1), 179-203.
https://doi.org/10.24854/jpu458

Angus Reid Institute. (2020a). *Worry, gratitude & boredom: As COVID-19 affects mental, financial health, who fares better; who is worse?*. Angus Reid Institute.
https://angusreid.org/covid19-mental-health/

Angus Reid Institute. (2020b). *Isolation, loneliness, and COVID-19: Pandemic leads to sharp increase in mental health challenges, social woes*. Angus Reid Institute.
https://angusreid.org/isolation-and-loneliness-covid19/

Annur, C. M. (2023). *Survei LSI: Masyarakat tetap anggap masker penting meski PPKM sudah tak ada* [Indonesian Survey Agency survey: People still consider masks to be important despite no more social distancing]. Databoks. Retrieved March 17, 2023 from
https://databoks.katadata.co.id/datapublish/2023/01/24/survei-lsi-masyarakat-tetap-anggap-masker-penting-meski-ppkm-sudah-tak-ada

Arli, D. (2023). The impact of health message on people's attitude toward wearing a mask: The moderating role of self-construal [Dampak pesan kesehatan terhadap sikap penggunaan masker: Peran moderasi self-construal]. *ANIMA Indonesian Psychological Journal, 38*(2), 429-459.
https://doi.org/10.24123/aipj.v38i2.5287

Asmundson, G. J. G., & Taylor, S. (2020). How health anxiety influences responses to viral outbreaks like COVID-19: What all decision-makers. health authorities. and health care professionals need to know. *Journal of Anxiety Disorders, 71:* 102211.
https://doi.org/10.1016/j.janxdis.2020.102211

Azwar, S. (2008). *Penyusunan skala psikologi (Edisi ke-1)* [Creation of psychological scales (1st ed.)]. Pustaka Pelajar.
https://pustakapelajar.co.id/buku/penyusunan-skala-psikologi/

Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *The Lancet, 395*(10227), 912-920.
https://doi.org/10.1016/S0140-6736(20)30460-8

Calvete, E., & Connor-Smith, J. K. (2006). Perceived social support, coping, and symptoms of distress in American and Spanish students. *Anxiety, Stress, & Coping: An International Journal, 19*(1), 47-65.
https://doi.org/10.1080/10615800500472963

Chatterjee, K., & Chauhan, V. S. (2020). Epidemics. quarantine and mental health. *Medical Journal Armed Forces India, 76*(2), 125-127.

https://doi.org/10.1016/j.mjafi.2020.03.017

Coaley, K. (2010). *An introduction to psychological assessment and psychometrics*. SAGE Publication.
https://doi.org/10.4135/9781446221556

Diener, E., & Lucas, R. E. (2023). Personality traits. In R. Biswas-Diener, & E. Diener (Eds.), *Noba textbook series: Psychology*. DEF Publishers.
https://noba.to/96u8ecgw

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

Ghozali, I. (2018). *Aplikasi analisis multivariate dengan program IBM SPSS 25 (Edisi ke-9)* [Application of multivariate analysis with IBM SPSS 25 (9th ed.)]. Badan Penerbit Universitas Diponegoro.

Goldberg, L. R. (1981). Language and individual differences: The search for universals in personality lexicons. In L. Wheeler (Ed.), *Review of personality and social psychology (Vol. 2)* (pp. 141-165). SAGE Publication.

Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment, 4*(1), 26-42.
https://doi.org/10.1037/1040-3590.4.1.26

Harper, C. A., Satchell, L. P., Fido, D., & Latzman, R. D. (2021). Functional fear predicts public health compliance in the COVID-19 pandemic. *International Journal of Mental Health and Addiction, 19*(15), 1875-1888.
https://doi.org/10.1007/s11469-020-00281-5

Hong, S., Kim, H., & Park, M. K. (2021). Impact of COVID-19 on post-traumatic stress symptoms in the general population: An integrative review. *International Journal of Mental Health Nursing, 30*(4), 834-846.
https://doi.org/10.1111/inm.12875

Horney, K. (1945). *Our inner conflicts: A constructive theory of neurosis*. W. W. Norton & Company, Inc..
https://wwnorton.com/books/9780393309409

Huang, Y., & Zhao, N. (2020). Mental health burden for the public affected by the COVID-19 outbreak in China: Who will be the high-risk group?. *Psychology, Health & Medicine, 26*(1), 23-34.
https://doi.org/10.1080/13548506.2020.1754438

John, O. P., & Srivastava, S. (1999). The Big-Five trait taxonomy: History. measurement. and theoretical perspectives. In L. A. Pervin, & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed.) (pp. 102-138). The Guilford Press.
https://awspntest.apa.org/record/1999-04371-004

John, O. P., & Soto, C. J. (2007). The importance of being valid: Reliability and the process of construct validation. In R. W. Robins, R. C. Fraley, & R. F. Krueger (Eds.), *Handbook of research methods in personality psychology* (pp. 461-494). The Guilford Press.
https://psycnet.apa.org/record/2007-11524-027

John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative Big Five trait taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (pp. 114-158). The Guilford Press.
https://psycnet.apa.org/record/2008-11667-004

Khosravi, M. (2020). Neuroticism as a marker of vulnerability to COVID-19 infection. *Psychiatry Investigation, 17*(7), 710-711.
https://doi.org/10.30773/pi.2020.0199

Kindred, R., & Bates, G. W. (2023). The influence of the COVID-19 pandemic on social anxiety: A systematic review. *International Journal of Environmental Research and Public Health, 20*(3): 2368.
https://doi.org/10.3390/ijerph20032362

Kristhi, N. S., & Sukmaningrum, E. (2023). Neurotic trends among individuals in early adulthood who experience emotional abuse in dating relationships [Tren neurotik pada individu dewasa awal yang mengalami kekerasan emosional dalam hubungan berpacaran]. *ANIMA Indonesian Psychological Journal, 38*(2), 250-289.

https://doi.org/10.24123/aipj.v38i2.4897

Li, L. Z., & Wang, S. (2020). Prevalence and predictors of general psychiatric disorders and loneliness during COVID-19 in the United Kingdom. *Psychiatry Research, 291:* 113267. https://doi.org/10.1016/j.psychres.2020.113267

Malhotra, R., Chan, A., Malhotra, C., & Østbye, T. (2012). Validity and reliability of the Caregiver Reaction Assessment scale among primary informal caregivers for older persons in Singapore. *Aging & Mental Health, 16*(8), 1004-1015. https://doi.org/10.1080/13607863.2012.702728

McCrae, R. R., & Costa, P. T., Jr. (1999). A five-factor theory of personality. In L. A. Pervin, & O. P. John (Eds.), *Handbook of personality psychology* (pp. 139-153). Guilford Press. https://psycnet.apa.org/record/1999-04371-005

Muchson, M. (2017). *Statistik deskriptif* [Descriptive statistics]. Guepedia.

Nasrullah, & Sulaiman, L. (2021). Analisis pengaruh COVID-19 terhadap kesehatan mental masyarakat di Indonesia [Analysis on the effects of COVID-19 on community mental health in Indonesia]. *Media Kesehatan Masyarakat Indonesia (MKMI), 20*(3), 206-211. https://doi.org/10.14710/mkmi.20.3.206-211

Natalya, L. (2016). Struktur internal [Internal structure]. In I. B. Siaputra, & L. Natalya (Eds.), *Teori dan praktik cara asyik belajar pengukuran psikologis* [Theory and practice on interesting ways to learn psychological measurements]. Center for Lifelong Learning - Universitas Surabaya.

Ormel, J., Rosmalen, J., & Farmer, A. (2004). Neuroticism: A non-informative marker of vulnerability to psychopathology. *Social Psychiatry and Psychiatric Epidemiology, 39*(11), 906-912. https://doi.org/10.1007/s00127-004-0873-y

Pervin, L. A., Cervone, D., & John, O. P. (2010). *Psikologi kepribadian: Teori dan penelitian (Edisi ke-9)* [Handbook of personality: Theory and research (9th ed.)] (A. K. Anwar, Trans.). Kencana Prenada Media Group.

Rani, A. M. (2022). *Pemerintah resmi longgarkan kebijakan penggunaan masker* [Government officially loosens mask-wearing policy]. Kementerian Kesehatan Republik Indonesia. Retrieved March 17, 2023 from https://promkes.kemkes.go.id/pemerintah-resmi-longgarkan-kebijakan-penggunaan-masker

Rice, J. A. (2006). *Mathematical statistics and data analysis* (3rd ed.). Duxbury Advanced.

Rudenstine, S., McNeal, K., Schulder, T., Ettman, C. K., Hernandez, M., Gvozdieva, K., & Galea, S. (2021). Depression and anxiety during the COVID-19 pandemic in an urban, low-income public university sample. *Journal of Traumatic Stress, 34*(1), 12-22. https://doi.org/10.1002/jts.22600

Saladino, V., Algeri, D., & Auriemma, V. (2020). The psychological and social impact of Covid-19: New perspectives of well-being. *Frontiers in Psychology, 11:* 577684. https://doi.org/10.3389/fpsyg.2020.577684

Shokrkon, A., & Nicoladis, E. (2021). How personality traits of neuroticism and extroversion predict the effects of the COVID-19 on the mental health of Canadians. *PLoS ONE, 16*(5): e0251097. https://doi.org/10.1371/journal.pone.0251097

Sugiyono. (2016). *Metode penelitian kuantitatif, kualitatif, dan R&D (Edisi ke-1)* [Quantitative, qualitative, and R&D research methods (1st ed.)]. Alfabeta. https://cvalfabeta.com/product/metode-penelitian-kuantitatif-kualitatif-dan-rd-mpkk/

Wang, C., Tripp, C., Sears, S. F., Xu, L., Tan, Y., Zhou, D., Ma, W., Xu, Z., Chan, N. A., Ho, C., & Ho, R. (2021). The impact of the COVID-19 pandemic on physical and mental health in the two largest economies in the world: A comparison between the United States and China. *Journal of Behavioral Medicine, 44*(6), 741-759. https://doi.org/10.1007/s10865-021-00237-7

Wang, Y., Di, Y., Ye, J., & Wei, W. (2021). Study on the public psychological states and its related factors during the outbreak of coronavirus disease 2019 (COVID-19) in some regions of China. *Psychology, Health & Medicine, 26*(1), 13-22. https://doi.org/10.1080/13548506.2020.1746817

Xiong, J., Lipsitz, O., Nasri, F., Lui, L. M. W., Gill, H., Phan, L., Chen-Li, D., Iacobucci, M., Ho, R., Majeed, A., & McIntyre, R. S. (2020). Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *Journal of Affective Disorder, 277,* 55-64. https://doi.org/10.1016/j.jad.2020.08.001

Zajenkowski, M., Jonason, P. K., Leniarska, M., & Kozakiewicz, Z. (2020). Who complies with the restrictions to reduce the spread of COVID-19? Personality and perceptions of the COVID-19 situation. *Personality and individual differences, 166:* 110199. https://doi.org/10.1016/j.paid.2020.110199