Psychology Well-Being, Post-Traumatic Growth, and Stress Appraisal on COVID-19 Survivors

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Abstrak

Pandemi COVID-19 tentunya membawa banyak stressor psikososial, namun beberapa penelitian sebelumnya menemukan bahwa beberapa pasien yang sembuh dari COVID-19 menunjukkan pertumbuhan positif secara psikologis. Penelitian ini bertujuan untuk menyelidiki hubungan antara kesejahteraan psikologis, pertumbuhan pasca trauma, dan penilaian stres pada penyintas COVID-19. Psychological Well-Being Scale 18 item, Post-Traumatic Growth Inventory, dan Stress Appraisal Measure diterjemahkan ke dalam Bahasa Indonesia sebelum pengumpulan data. Ketiga instrumen tersebut kemudian diisi secara online oleh 136 penyintas COVID-19, usia bervariasi antara 18 tahun hingga lansia terkonfirmasi COVID-19 dengan gejala berat. Analisis statistik dilakukan untuk menguji hipotesis penelitian ini. Hasil menunjukkan bahwa tidak ada perbedaan yang signifikan pada tingkat PWB, PTG, dan SA terkait jenis kelamin, kelompok usia, dan latar belakang pendidikan. Korelasi antara Post-Traumatic Growth dan Psychological Well-Being pada penyintas COVID-19 ditemukan hubungan yang ignifikan (r=.241; p=.005). Analisis jalur menunjukkan bahwa Post Traumatic Growth hanya berperan sebagai mediasi dalam hubungan antara dimensi Centrality dan PWB serta Uncontrollable dan PWB. Pembahasan tentang bagaimana dimensi penilaian stres yang berbeda memengaruhi bagaimana pertumbuhan pasca-trauma memainkan peran mediasi menuju kesejahteraan yang lebih baik di antara penyintas COVID-19 di Indonesia dielaborasi lebih lanjut.

Kata kunci: Post-Traumatic Growth; Psychology Well-Being; Stress Appraisal

Abstract

The COVID-19 pandemic has certainly brought many psychosocial stressors, however, some previous studies found that some patients who have recovered from COVID-19 show growth psychologically. This study aims to investigate the relationship between psychological well-being (PWB), post-traumatic growth (PTG), and stress appraisal (SA) in COVID-19 survivors. By using three instruments, namely: Psychological Well-Being Scale 18 items, Post-Traumatic Growth Inventory, and Stress Appraisal Measure. The instruments were completed online by 136 COVID-19 survivors, ages varied between 18 years old to the elderly have confirmed COVID-19 with severe symptoms. Statistical analysis was conducted to test the hypothesis of the current study. Results show that there is no significant difference in PWB, PTG, and SA levels regarding sex, age groups, and educational background respectively. The correlation between PTG and PWB in COVID-19 survivors was found to be positively significant (r=.241; p=.005). Path analysis reveals that Post Traumatic Growth only plays a mediating role in the relationship between the dimensions of Centrality and PWB and Uncontrollable and PWB. Discussion on how different dimensions of stress appraisal affect how post-traumatic growth plays a mediating role towards better well-being among COVID-19 survivors in Indonesia is elaborated further.

Keywords: Post-Traumatic Growth; Psychology Well-Being; Stress Appraisal

INTRODUCTION

The global situation that in the past recent years becoming the world's main concern is the situation of the COVID-19 pandemic which was first identified in Wuhan in December 2019. The emergence of COVID-19 was first publicly announced by the World Health Organization on January 30, 2020 and was declared a pandemic on March 11, 2020. The latest global data for September 10, 2021 states that globally, within 224 countries, the number of positive cases of COVID-19 has reached 223,798,048. This number included 4,616,196 of them, who have been declared dead (John Hopkins University & Medicine, 2021). Looking at conditions in Indonesia itself, the national data from the government of the Republic of Indonesia as of September 10, 2021 states that the number of positive cases has reached 4.158.731 with a recovery rate of 3,901,766 and a death rate of 138,431 souls.

The COVID-19 pandemic has certainly brought many psychosocial stressors, where as a result, the stressors become related to the possibility of prolonged psychological problems, but like informed by Kluge & Henri (2020) socio-economic conditions such as access restrictions (social distancing) and economic crisis conditions also bring disruptive effects on human psychological conditions in general. Research conducted during the COVID-19 pandemic in various circles shows that the psychological pandemic conditions, in China Jin et al., (2020) show that COVID-19 has an impact on mental health and welfare in society. Meanwhile the results of research by Petzold et al., (2020) in communities in Germany stated that 50% of the participants involved in the study experienced anxiety and psychological distress due to the COVID-19 pandemic. In particular, it has an impact on the existence of specific problems of Psychological Well-Being (Laukkala et al., 2021; Molgora & Accordini, 2020; Raviv et al., 2021; Satpahty & Esrafil, 2020; Vallejo-Slocker et al., 2020).

Psychological Well-Being (PWB) is a form of a person's understanding of himself and his environment. Understanding makes that person easily adapt to the social environment and can carry himself in various situations. Problems that plague PWB during pandemic conditions usually cause an amount of psychological distress experienced by individuals, especially those with high risk, and as a consequence affects human functioning and the level of PWB (Laukkala et al., 2021; Taylor, 2019). Not many people who have been confirmed positive for COVID-19 show Post-Traumatic Stress Symptoms (PTSS) reactions, anxiety, and feelings of helplessness (Karnatovskaia et al., 2020; Matalon et al., 2021; Sudre et al., 2021). Research shows that the dynamics experienced by individuals when they are confirmed positive for COVID-19 are full of distress related to economic conditions, quarantine, and the somatic symptoms they experience, and by such are interpreted as traumatic events that lead to PTSS (Sun et al., 2021; Taylor, 2019).

Sun et al. (2021) reported that some patients who have recovered from COVID-19 shows positive psychological growth, which also leads to giving meaning to his life so as to achieve PWB, which also leads to giving meaning to their lives so that they achieve PWB. The results of this study indicate that PWB in crisis or trauma conditions needs to begin with a growth process, in this case, Post-Traumatic Growth (PTG), namely the positive psychological growth of an individual after a traumatic event or crisis caused by stress. The results of this study are similar to the research conducted by Dekel, Mandl, and Solomon (2011). Psychological well-being is realization of self-potential in individuals who includes the ability of individuals to be able to accept all the shortcomings and its own advantages, and able to change environmental conditions accordingly with his life goals. It will push the individual to attain happiness.

PTG according to Tedeschi & Calhoun (1996) is a process that occurs in individuals after a traumatic event that is experienced differently in everyone. PTG in the latest model/framework begins with the meaning and cognitive processes of everyone in dealing with stress (Calhoun et al., 2012). PTG is experienced by each individual differently and is influenced by the extent to which a person is able to evaluate and assess the stressors they face or better known as Stress Appraisal. This term refers to the process by which individuals evaluate and cope with stressful events. Stress Appraisal theory is concerned with the individual's evaluation of the event, not with the event itself. People then differ in how they interpret what happens to them and their choices for dealing with it (Lazarus, 1991).

There are two forms of Stress Appraisal, primary and secondary assessment, which are two stages of assessment or evaluation. The first appraisal is judgment, it is a cognitive process that occurs when a person assesses whether an event is stressful and relevant to him. Meanwhile, secondary appraisal is a cognitive process that occurs when a person thinks about how to deal with stressful events (Oliver & Brough, 2002). The two types of judgments are not mutually exclusive; they cooperate with each other to complete the assessment process. Stress Appraisal or also called Cognitive Appraisal of Stress is defined as the cognitive capacity to understand and evaluate stimuli in the form of stress triggers and produce emotions, affects, and each individual responds differently (Lazarus, 1991).

Stress Appraisal has an influence on growth and well-being (Oliver & Brough, 2002; Peacock & Wong, 1990). In addition to predicting PTG, stress appraisal also affects a person's PWB level but not directly. Harrington and Loffredo (Harrington & Loffredo, 2010) stated that insight, cognitive rumination processes, and self-reflection can predict a person's PWB level. Cognitive appraisal is central to stress, there is a very important mediator between events and outcomes (Oliver & Brough, 2002), so the process of meaning and cognitive evaluation that occurs within a person can be a predictor of PWB. Not all COVID-19 patients who have been treated in the hospital experience a decrease in well-being after recovering (Sun et al., 2021). improving well-

being in the recovery process from COVID-19 is strongly influenced by attitudes and cognitive processes when being a COVID-19 patient.

Study conducted by Ogińska-Bulik & Kobylarczyk (2016) shows that stress appraisal is a significant predictor of PTG. In addition to predicting PTG, several previous studies have also found that stress assessment also affects a person's PWB level but not directly (Cann & Collette, 2014; Nurius et al., 2015). This study aims to see the relationship between these three variables, considering that currently it is important to increase the PWB of patients who have recovered from COVID-19. This is based on the theoretical study above which describes the dynamics of the relationship between variables, in which Post-Traumatic Growth acts as a mediating relationship between Stress Appraisal and Psychological Well-Being. This is based on the theoretical studies above describing the dynamics of the relationship between variables, where Post-Traumatic Growth plays a mediating role in the relationship between Stress Appraisal and Psychological Well-Being

METHODS

Variable Identification
In this study there are three variables, namely: Stress Appraisal, as independent variable. Stress appraisal refers to the process by which individuals evaluate and cope with a stressful event. Stress Appraisal theory is concerned with individuals' evaluation of the event, rather than with the event per se. Secondly, Post Traumatic Growth, as a mediating variable. This refers to positive psychological changes that result from the struggle to deal with traumatic or extremely challenging life experiences. The experience of a traumatic event can have a transformational role in the personality of certain individuals and facilitate growth and psychological well-being is a core feature of mental health, and may be defined as including hedonic (enjoyment, pleasure) and eudemonic (meaning, fulfillment) happiness, as well as resilience (coping, emotion regulation, healthy problem solving) as the dependent variable.

Respondents
A total of 136 participants, aged between 18 years up to the elderly have confirmed COVID-19 with severe symptoms. They have been treated in hospitals and have currently recovered from COVID for at least 2 months to allow for recovery time and the possibility of experiencing growth, or Post-Traumatic Growth. Convenience sampling is the technique used in this (Edgar aet al., 2017).

Research Instruments
There are three measurement tools that were completed by each participant that measures the three variables of this study. They are: a) Stress Appraisal Measure (Peacock & Wong, 1990) Stress Appraisal Measure (SAM) measures cognitive abilities to evaluate stressors which are divided into three categories: the stress appraisal dimension according to Peacock & Wong, namely primary stress appraisal, secondary stress appraisal, and overall stress. b) Revised Post-Traumatic Growth Inventory (Tedeschi & Calhoun, 1996)which measures how much growth in the five domains is experienced by individuals after experiencing a crisis/traumatic event. The aspects that are measured are Personal strength, Relating to Others, Encompasses Appreciation for Life, New Possibilities, and Spiritual Changes. c) Another measuring tools. The measurement consists of 18 items that measure 6 aspects, namely self-acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life, and personal growth.

Research Design
Quantitative design was used in this article to investigate the relationship among these three variables. Quantitative data and statistical analysis were chosen to be conducted for this research in order to attain more comprehensive findings regarding the topics.

Data Collection Procedure
In the early stages of this study, approval from the ethics committee was obtained so that it could be given to the target participants. After obtaining ethical approval, the researcher distributes the research instrument through social media by including informed consent on the link that will be filled in by the participants. Data collection was carried out in mid-2022 after most people recover from the Delta variant of COVID-19.

Data Analysis Techniques
The data that has been obtained is then analyzed using IBM SPSS 26 software. The validity of the measuring instrument is carried out by using the Part-whole correlation method and the reliability of the measuring instrument is also carried out by means of a reliability test. In addition, assumption tests were also carried out in the form of normality tests, linearity tests, and multicollinearity. Descriptive analysis was then also carried out to present detailed demographic data. To investigate the relationship between variables, test the correlation. In the analysis, Pearson is used considering the normality assumption test that has been fulfilled. Hypothesis testing uses path analysis with the help of PROSSES Macro by Hayes (2017) was also used.

RESULTS

Measurement Instrument
In this study, three instruments were used to uncover research variables, namely the Psychological Well-Being Scale – 18 items, the Post Traumatic Growth Inventory, and the Stress Appraisal Measure. The three scales were translated from the original language, namely English to Indonesian and statistical tests were carried out to see the validity and reliability of the measuring instrument with the results of the PWB Scale – 18 items that had 17 items validity with a part-whole correlation coefficient ranging from .191 to .720 and reliability test with a Cronbach Alpha coefficient of .776. Next, the PTGI instrument shows all 21 items validity with a part-whole correlation coefficient ranging from .461 to .817 and reliability with a Cronbach Alpha coefficient of .943. For the SAM instrument, the part-whole measurement is carried out per dimension with 4 valid items for each of the seven dimensions of Threat, Challenge, Centrality, Controllable by Self, Controllable by Others, Uncontrollable, and Overall Stress. This instrument also tested the reliability with a Cronbach Alpha coefficient of .865 face-to-face and online courses during was statistically reliable (when both face-to-face and online courses were evaluated with online surveys), the effect was small (ηp 2 = .02). Thus, there was minimal difference in response rate between face-to-face and online courses when evaluations were administered online for all courses. No other factors or interactions included in the analysis were statistically reliable.

Demographic Data
This study was attended by 136 participants who met the criteria by using convenient sampling through the Google Form, which contained demographic data and measuring instruments. Based on gender, there were more male participants in this study with 50.7% of the total participants. The duration of the participants' hospitalization varied, ranging from the fastest of 2 days to 50 days (with a mean of 11.43; SD = 7.615). Participants came from various age levels with the majority aged 50-59 years (27.2%) and 30-39 years (26.5%), besides that there were also participants from other age levels as shown in Table 1.

Table 1. Demographics Data

VARIABLE	CATEGORY	PERCENTAGE
Gender	male	50.7%
	female	49.3%
Age	18-29.	20.6%
	30-39	26.5%
	40-49	18.4%
	50-59	27.2%
	≥ 60	7.4%
Education Level	Yunior high school	.7%
	High school	21.3%
	Undergraduate	53.7%
	Master's degree	22.8%
	Doctoral's degree	1.5%
Marriage status	Single	26.5%
	Married	68.4%
	Divorced	5.1%

More than half of the participants had different backgrounds. When viewed based on marital status, 68.4% of all participants were married. Table 1 describes in detail the Demographic Data of the participants in this study and Table 2 describes the Mean and SD of each of the variables measured.

Table 2. Mean and SD research variables.

VARIABLE	MEAN	SD
Stress Appraisal – Challenge	13.43	2.869
Stress Appraisal – Threat	12.31	4.025
Stress Appraisal – Centrality	12.80	3.847
Stress Appraisal – Controllable by Self	13.00	2.413

Stress Appraisal – Controllable by Others	16.32	2.778
Stress Appraisal – Uncontrollable	10.82	4.059
Stress Appraisal – Overall Stress	12.54	3.983
Post-Traumatic Growth	68.47	19.987
Psychological Well Being	88.88	10.887

Correlation

Correlation analysis was carried out for each measurement variable. The Stress Appraisal variable measurements were separated based on each dimension to get the right results considering that not all dimensions have the same hypothesis direction. Post-Traumatic Growth and Psychological Well-Being in COVID-19 survivors in this study showed a significantly positive correlation (r=.241; p=.005). The dimensions of Stress Appraisal Challenge (r=.242; p=.005), Controllable by Self (r=.241;p=.005), and Controllable by Others (r=.211; p=.014) are positively and significantly correlated with PWB. Whereas, Threat dimension of Stress Appraisal has a significant negative correlation with PWB (r= -.232; p=.007). In the relationship between SA and PTG, the dimensions are Challenge (r=.286; p=.001), Centrality (r=.228; p=.008), Controllable by Others (r=.197; p=.022), Uncontrollable (r=.192;p=.025), and Overall Stress (r=.266; p=.002) showed a significant positive correlation with the PTG variable. In addition, not all dimensions of Stress Appraisal correlate with the duration of confirmed COVID-19 patients, only two dimensions have a statistically significant correlation, namely Uncontrollable (r=212; p=.013) and Overall Stress (r=.174 ;p= 043). The variables of Post-Traumatic Growth and Psychological Well-Being did not show a significant relationship with the duration of COVID-19 treatment at the hospital.

T-Test and ANOVA

In addition to the correlation test, t-test and ANOVA were also carried out to see if there were any differences between the three main research variables and demographic variables. There were no significant differences in PWB, PTG, and SA dimensions between the genders. Other findings show no significant differences in PWB, PTG, and SA dimensions between age groups. The results of the ANOVA also showed that there were no significant differences in PWB, PTG and SA dimensions between educational level groups.

Path Analysis

Hypothesis testing in this study was carried out by path analysis using PROCESS. In the path analysis, five frameworks were created considering that the Stress Appraisal variable has seven dimensions that cannot be analyzed as a single unit. PTW has a significant influence on the PWB of COVID-19 survivors in all existing frameworks. Meanwhile, almost all dimensions of stress appraisal have a significant effect on Post-Traumatic Growth except for the Controllable by self-dimension.

Based on the results of the path analysis it was also found that Post Traumatic Growth played a mediating role only in the relationship between the dimensions of Centrality and PWB and Uncontrollable and PWB. As for the relationship between the other dimensions of SA and PWB, PTG does not play a mediating role. In the relationship between Centrality and PWB, PTG plays a full mediating role where the direct relationship between Centrality and PWB is not significant (β=-.355; p=.17), and the indirect relationship (after PTG is introduced) becomes significant (β=.173; LLCI=.024; ULCI=.38). In the relationship between the Uncontrollable dimension and PWB, PTG plays a full mediating role where the relationship is direct Uncontrollable and PWB were not significant (β=-.437; p=.056), and the indirect relationship (after PTG was introduced) became significant (β=.14; LLCI=.005;ULCI=.328). The following is a chart of results Path analysis with Stress Appraisal scheme (each dimension) – Post-Traumatic Growth – Psychological Well-Being.

DISCUSSION

This study shows the results that there is a relationship between Stress Appraisal (SA) and Psychological Well-Being (PWB), where Post-Traumatic Growth (PTG) acts as a mediating variable. The role of PTG mediating between AS and PWB, as the process of adaptation to stressful life events can differ from person to person, leading to distress but also positive change is included under the rubric of Post-Traumatic Growth (PTG). This is a process of personal transformation that may result from dealing with a traumatic event. PTG is a complex phenomenon, like the concept of psychological or eudemonic well-being, in which positivity and distress can coexist (Boerner et al., 2017). Investigations show that the relationship between PTG, well-being, and distress can be explained using a curved model, in which distress is needed to start the growth process, but a high level of distress prevents the growth process from occurring (Hamama & Sharon, 2013). In line with research conducted by Bharani et al., (2022) what is felt and thought about stress, and what they experience will be related to a person's mental well-being. Someone who feels that he has the inability to control the stress he is experiencing will then affect that person's life.

The results of the study showed that there were no significant differences in SA, PTG, and PWB based on gender, age, and educational background. This finding supports the results of several previous studies related to the COVID-19 pandemic which found that there are various other factors that have more influence on the psychological condition of patients or survivors including the level of knowledge related to clinical conditions, lifestyle, family health conditions, and how one perceives control over their health condition (Bani Issa et al., 2022; Uzun Şahin et al., 2022; Xiong et al., 2021). Therefore, survivors from various age groups and educational backgrounds showed no differences in psychological conditions.

The impact of a traumatic experience can be related positively or negatively. Tedeschi & Calhoun (2004) believe PTG is a more relevant term regarding observed outcomes among survivors of traumatic events than earlier theories of stress-related growth. Calhoun & Tedeschi (2006) define PTG as positive changes following exposure to traumatic events because of struggling with adversity. This is supported by several studies that believe there is a positive association between PTG after a traumatic event and PWB (Boerner et al., 2017; Ruini et al., 2013; Widyorini et al., 2022). The negative impact of a traumatic experience is PTSD, which is a condition that tends to make sufferers feel anxious and afraid when they remember the traumatic event (Boener et al., 2017).

This study shows that SA and PWB partially have a positive correlation, namely on the dimensions of Challenge, Controllable by self, and Controllable by others. This supports Glozah's (2013) research on academic stress appraisal which is considered a challenge positively correlated with the psychological well-being of adolescents. Conversely, if it is perceived as a threat or threat, it will disrupt PWB. Likewise, Cohen et al. (2016) said that it is different from individuals who have a positive appraisal, because people will tend to have an orientation toward the future, with goals and plans for their own well-being.

The diagnosis of COVID-19 and its treatment are associated with the emergence of Post-Traumatic Stress Disorder (PTSD) or Post-Traumatic Growth (PTG) syndrome. The tendency towards both is influenced by the Assessment Of Stress (SA) experienced by survivors, which is in line with the cancer research done by Bussell & Naus (2010). However, the threat dimension is different from the other SA dimensions because the threat is negatively related to PWB. This shows that if there is a belief that in an event someone is found experiencing a threat, then the individual will feel a lack of sufficient resources to deal with the stressor, and therefore feels in danger/ threat (Blascovich & Mendes, 2000). This is because he thinks that he is not helpless and unable to get through difficult conditions, which causes his PWB to be low. Research conducted by Rahma dan Lisnawati (2018) regarding the relationship between PWB and spiritual factors, the results of the research show that there is a significant relationship between religiosity and psychological well being.

PTG plays a role as mediating a full variable on the relationship between SA and PWB, but there is only a relationship between the two dimensions of SA, namely the dimensions of Centrality and Uncontrollability. Centrality is a dimension of thinking that welfare is something important, and one must have the ability to evaluate an outcome from stressful events. Likewise, the Uncontrollable dimension of SA is not directly correlated unless mediated by PTG. The ability to carry out coping strategies depends on someone's assessment of the incident, one of which is the Uncontrollability assessment of the incident. The ability to cope strategies occurs well when a difficult situation is accepted as a controllable situation, so there will be an inability to adapt through difficult times when the situation is felt to be incapable of being controlled (Chishima et al., 2018).

The uniqueness of this study shows that several dimensions of SA, such as Challenge, Controllable by Self, and Controllable by Others have a positive and significant correlation with PWB that is being mediated by PTG. This finding is in line with the results of a recent study by Xiong et al. (2021) who also stated that if patients and their families perceive themselves as having control over their health 16 conditions, this sense of control will be a strong protective factor for individuals who have expertise in the medical field or not. Furthermore, because it has a strong protective factor, an event diagnosed with COVID-19 does not become an event that causes trauma and is able to encourage survivors to recover psychologically without going through the PTG process (Calhoun et al., 2012; Calhoun & Tedeschi, 2006). Specifically for the Indonesian people, satisfactory support, especially from health workers who make them believe that this condition is under control, will have a direct positive effect on a person's psychological condition so that they do not perceive the incident as a traumatic event (Pramukti et al., 2020). Furthermore, because it has a strong protective factor, an event diagnosed with COVID-19 does not become an event that causes trauma and is able to encourage survivors to recover psychologically without going through the PTG process (Calhoun et al., 2012; Calhoun & Tedeschi, 2006). Specifically for the Indonesian people, satisfactory support, especially from health workers who make them believe that this condition is under control, will have a direct positive effect on a person's psychological condition so that they do not perceive the incident as a traumatic event (Pramukti et al., 2020).

CONCLUSION

This study aims to examine the relationship between stress appraisal, post-traumatic growth, and psychological well-being among COVID-19 survivors. Besides, this study also proposes the idea of whether post-traumatic growth plays a mediating role in the path between stress appraisal and psychological wellbeing. Results show that post-traumatic growth indeed plays a mediating role only if survivors experience specific dimensions of stress appraisal which are Centrality or Uncontrollable.

<u>Suggestions</u>

These findings could be beneficial to be applied to policy making regarding those patients who experienced different kinds of appraisal regarding pandemic issues. Those who perceived the pandemic as a traumatic event (which adopts centrality and uncontrollable stress appraisal) might need more support focused on post-traumatic growth which in turn would be beneficial for them to attain higher well-being. However, if the patients perceived that they have adequate control or support during the hospitalization healthcare workers should focus on guiding those patients to have more sufficient coping strategies to maintain good psychological well-being.

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