

HEALTH SELF-REGULATION AND SELF-COMPASSION AS PREDICTORS OF COVID-19 PREVENTIVE BEHAVIOR AMONG INDONESIAN SAMPLE

Dicky Sugianto, Jessica Amelia Anna, & Sandra Handayani Sutanto

Department of Psychology, Universitas Pelita Harapan, Jalan M. H. Thamrin Boulevard 1100, Lippo Village, Tangerang 15811, Indonesia

Korespondensi: dicky.sugianto@uph.edu

REGULASI DIRI KESEHATAN DAN WELAS DIRI SEBAGAI PREDIKTOR PERILAKU PENCEGAHAN COVID-19 PADA SAMPEL INDONESIA

Manuscript type: Original Research

Abstrak

Pengabaian protokol kesehatan untuk mencegah penularan COVID-19 di Indonesia menimbulkan keprihatinan dalam usaha mengatasi pandemi. Penelitian ini bermaksud untuk menguji regulasi diri kesehatan dan welas diri sebagai prediktor perilaku pencegahan COVID-19. Sampel yang terdiri dari 366 partisipan di Indonesia direkrut melalui teknik sampling *nonprobability* dengan mengisi survei daring. Temuan menunjukkan bahwa regulasi diri kesehatan dan welas diri memprediksi perilaku pencegahan COVID-19. Usia juga berkorelasi positif dengan perilaku pencegahan COVID-19. Hasil penelitian menunjukkan pentingnya promosi regulasi diri kesehatan dan welas diri dalam usaha melandaikan kurva pandemi.

Article history:

Received 4 December 2020
Received in revised form 22 Februari 2021
Accepted 21 March 2021
Available online 4 September 2021

Kata Kunci:

Indonesia
pandemi COVID-19
perilaku pencegahan COVID-19
regulasi diri kesehatan
welas diri

Abstract

The negligence of health protocols of COVID-19 prevention in Indonesia arises concerns in the mitigation of the pandemic. This study aims to examine health self-regulation and self-compassion as predictors of COVID-19 preventive behavior. A sample consisting of 366 participants in Indonesia recruited through non-probability sampling completed an online survey. Findings showed that health self-regulation and self-compassion predict COVID-19 preventive behavior. Age is also positively correlated with COVID-19 preventive behavior. The results indicate the importance of health self-regulation and self-compassion promotion to flatten the pandemic curve.

Keywords: COVID-19 pandemic, COVID-19 preventive behavior, health self-regulation, Indonesia, self-compassion

Impacts and Implications in the Indigenous Context

This research shed insight on efforts to promote COVID-19 preventive behavior among Indonesian citizens. Due to the increasing numbers of new positive cases in Indonesia, it is essential to take immediate step to flatten the pandemic curve. Accommodating health self-regulatory skills and self-compassion into health behavior promotion can assist the government's effort in mitigating the impacts of pandemic. Social and religious institutions, which are close to the lives of Indonesian citizen, may support citizens' emotional regulation and health self-efficacy that is imperative in COVID-19 preventive behavior. Promoting self-compassion and health self-efficacy during the pandemic through social and religious activities may be useful in reinforcing COVID-19 preventive behavior.

Handling Editor: Made Diah Lestari, Faculty of Psychology, Universitas Udayana, Indonesia



This open access article is licensed under [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction, provided the original work is properly cited.

INTRODUCTION

COVID-19 pandemic is a global health crisis that requires immediate mitigation. Data on September 30th 2020 showed that there were 33,441,919 confirmed cases of COVID-19 and 1,003,497 deaths globally (World Health Organization [WHO], 2020a). In Indonesia, there were 287,008 confirmed cases and 10,740 deaths by September 30th, 2020 (Komite Penanganan COVID-19 dan Pemulihan Ekonomi Nasional, 2020), which was the second highest among South-East Asian countries (Center for Strategic & International Studies, 2020). The positive rate (ratio between the number of positive cases with the number of testing) by September 4th in Indonesia was 13.6% (Purnamasari, 2020), which was the highest in Asia (Rizal, 2020).

Many factors contribute to the high prevalence of confirmed COVID-19 cases in Indonesia. One of the crucial contributing factors to this prevalence is the negligence of health protocol, such as physical distancing, proper mask-wearing, and frequent handwashing (Arbar, 2020). Many sources reported that people in the red zones (areas where there is high incidence of positive COVID-19 cases) ignored appropriate health behaviors (e.g. Hamdi, 2020; Mandailing, 2020; Putra, 2020).

The adherence to COVID-19 preventive behavior is essential to mitigate this pandemic (Prem et al., 2020). Physical distancing and self-quarantine have effectively flattened the pandemic curve, as shown in countries like Taiwan, Singapore, and South Korea. Moreover, in these countries individual-level mitigation is integrated into country-level mitigation system (Anderson et al., 2020; Wilson, 2020). Given the urgency of compliance to COVID-19 preventive behavior to flatten the pandemic curve, it is essential to understand what factors predict the preventive behavior.

Previous studies have explored predictive factors of preventive health behavior. Self-regulatory processes, such as emotional regulation skills and self-efficacy, are related to preventive health behavior (Ayed & El Aoud, 2020; Fernández-Abascal & Martín-Díaz, 2015; Gerend & Shepherd, 2012). Individual differences, such as mindfulness disposition (Haliwa et al., 2020) or prosociality (Campos-Mercade et al., 2020) is also related to preventive health behavior. However, little is known about the relationship between self-regulatory processes and individual disposition such as mindfulness or empathy-related disposition with COVID-19 preventive behavior. Thus, it needs further investigation.

Health Self-Regulation

Health self-regulation model explains the relationship between affect regulation and the adoption and maintenance of health behavior goals. Health self-regulation refers to an individual's cognitive, affective, and behavioral process to pursue health-related goals, such as promoting health, preventing illness, and ameliorate health conditions (Hagger, 2010; Mann et al., 2013). Health self-regulation is conceptualized as effectiveness in emotional regulation, indicated by high levels of positive affect and low level of negative affect, and health self-efficacy (Sirois, 2015). Health self-efficacy is individuals' belief in their ability to do necessary health behavior to attain health goals (Schwarzer & Luszczynska, 2008). In pursuing health goals, individuals must regulate their emotions and believe so that they can do health-promoting behavior to attain that health goals (Hennessy et al., 2020; Sirois, 2015; Terry & Leary, 2011). Hindrance to emotional regulation, such as intense negative emotions and ineffective emotional regulation, may prompt the individual to neglect or obstruct behavior to attain the health goal (Baumeister et al., 2007; Terry & Leary, 2011).

COVID-19 pandemic invokes negative emotions. Many people frequently experience distress and anxiety (Rajkumar, 2020) due to the threat of contagion or self-quarantine policy, which limits social activities. Changes in socioeconomic circumstances (e.g., salary decline and unemployment) contribute to distress and anxiety. These intense negative emotions may disrupt daily functions, such as disruption in sleep and work or worsening preexisted psychological problems (e.g., Rajkumar, 2020; Torales et al., 2020).

Furthermore, intense distress and frustration may prompt the individual to engage in unhealthy and counterproductive behaviors to regulate negative emotion (Baumeister et al., 2007). For example, uncomfortable feelings due to mask-wearing may refrain people from wearing a mask. Maintaining a minimum of 2 meters of physical distance may also invoke uncomfortable feelings for Indonesian people who prefer physical closeness (less than a meter; Sorokowska et al., 2017). This regulation tends to be neglected. Regulating intense negative affect due to performing health protocol is one of the crucial things to do to maintain COVID-19 preventive behavior.

Another contributing factor to health goal attainment is health self-efficacy (Hennessy et al., 2020; Sirois, 2015). Individuals who believe that they can accomplish a health goal may exercise better self-regulation in adopting a health behavior (Schwarzer, 2011). Previous studies found that health self-efficacy level is related to health behavior in chronic illness management, such as diabetes (Osborn et al., 2010), prevention of contagious diseases, such as human papillomavirus (Petrovic et

al., 2011), and the adoption of health-promoting lifestyle (Jackson et al., 2010). Health self-efficacy and emotional regulation are integral to the health self-regulation model in pursuing health goals.

Self-Compassion

Self-compassion is a variable that may promote health behavior (Biber & Ellis, 2017; Sirois et al., 2015; Terry & Leary, 2011). Self-compassion was found related to the quantity of health behavior, such as adequate sleep, regular exercise, intuitive eating (ingestion due to need of nutrient rather than emotional), and healthy eating (Biber & Ellis, 2017; Horan & Taylor, 2018; Schoenefeld & Webb, 2013; Sirois et al., 2015). People with high self-compassion also seek for medical advice sooner when they have health-related problems (Terry et al., 2013).

Self-compassion is a self-supporting attitude amid suffering and active participation to alleviate oneself from the suffering (Neff & Germer, 2017). Self-compassion has three positive components: self-kindness, common humanity, and mindfulness, allowing a person to endure the hardships they face and actively seek a solution (Neff & Germer, 2017; Sirois et al., 2015). When dealing with health-related problems that invoke intense negative feelings (e.g., the rise of the COVID-19 pandemic which triggers anxiety and distress), self-compassion may help a person to be mindful of such a negative affect without being carried away in rumination (Brion et al., 2014; Brown et al., 2019). The person also is hindered from overwhelming feelings of behavioral and health consequences of the pandemic and try to see the pandemic from a different perspective (Hall et al., 2013). They may come to understand that COVID-19 affects everyone else. These mindful attitudes and balanced perspectives are followed by being supportive to oneself during the uncertainty (Brion et al., 2014). These result in practicing health protocols to prevent oneself from COVID-19 infections. Therefore, self-compassion also functions as an emotional regulation when people deal with health problems (Homan & Sirois, 2017). In the context of COVID-19 pandemic, self-compassion actively directs behavior to avoid oneself from worse health decline.

Self-compassion was found to facilitate healthy emotional regulation (Inwood & Ferrari, 2018), which is an essential part of self-regulation. Self-compassion alleviates difficult emotions that often arise when doing behavioral changes to attain a health goal (Terry & Leary, 2011). For example, when individual is required to follow lockdown regulation, self-compassion helps individual in facing boredom, anger, and distress through emotional mindfulness and positive perspectives. The negative emotions are genuinely accepted with self-warmth and support, rather than engulfed on it. In result, maladaptive behavior (e.g., being angry at policymakers or going outside to meet people) is

withdrawn. Here, emotional regulation helps people obey the regulation because they are able to regulate negative emotions effectively.

Current Study

This research aims to explore the role of health self-regulation and self-compassion in COVID-19 preventive behavior. The results of this study may be helpful in promoting preventive behavior, especially in Indonesia. We hypothesize that higher levels of health self-regulation and self-compassion are related to higher COVID-19 preventive behavior among Indonesians.

METHOD

Participants

This research took an online sample of Indonesian citizens consisting of 366 participants aged 17-64 years old ($M = 32.22$; $SD = 9.76$). Two hundred and seventy-two participants (75.68%) were identified as women, whereas 89 (24.31%) others were men. Participants were recruited by nonprobability sampling, where the links to online questionnaires were distributed through various channels in the authors' social media networks from June to July 2020. Detailed participants' demographics is presented in Table 1.

Table 1.
Participants Demographic

Variables		N	%
Education	Primary-Secondary	69	18.85
	Diploma	25	6.83
	Undergraduate	192	52.46
	Master	79	21.58
	PhD	1	.28
Monthly Income	< Rp 3,000,000	81	22.13
	Rp 3,000,000–Rp 5,000,000	61	16.67
	Rp 5,000,000–Rp 10,000,000	69	18.85
	Rp 10,000,000–Rp 20,000,000	73	19.95
	> Rp 20,000,000	82	22.40

Design

This research employed a quantitative correlational design to investigate the relationships between variables. Data were obtained using psychological scales to measure the variables and were

analyzed using statistical analyses. Multiple regression analysis was used to understand whether health self-regulation and self-compassion significantly predict COVID-19 preventive behavior.

Procedure

A literature review was conducted before the study to understand the role of health self-regulation and self-compassion in health behaviors. We then prepared the instruments to measure the variables, developed the COVID-19 preventive behavior questionnaire and, conducted informed consent for the participants. We acquired the permission from the authors to use the instruments for research purposes. We also received institutional ethics committee approval for this study.

After the instruments were ready, we prepared the online survey form and then the participants were invited through social media. Participants indicated their consent before being able to access the questionnaire and were offered an opportunity to participate in a draw of IDR 50.000 (equal to US\$ 3) for 30 participants as compensation for their participations. The data retrieved from the online survey were then analyzed using JASP.

Instruments

Health Self-regulation

The Indonesian version of Positive and Negative Affect Schedule (PANAS) (Watson et al., 1988; Yusainy & Wicaksono, 2019) and health self-efficacy subscale of Control Beliefs Inventory (CBI; Sirois, 2003) were used to measure participants' health self-regulation according to Sirois' (2015) model. PANAS is a self-report questionnaire measuring 10 positive and 10 negative affect states (e.g., 'Interested', 'Excited', 'Strong' for positive affect; 'Distressed', 'Irritable', 'Scared' for negative affect). Participants indicated their degree of agreement for each item on a Likert scale ranging from 1 (Little or not at all) to 5 (Very). Indonesian version of PANAS indicates good reliability (*Cronbach's Alpha* > .84; Yusainy et al., 2019) for both positive and negative affect. *Cronbach's Alpha* for the current sample is .828 and .872 for positive and negative affect, respectively.

Health self-efficacy subscale of CBI is a self-report questionnaire measuring the perception of self-ability in maintaining health. The subscale consists of eight items in which participants were asked to indicate agreement using a Likert scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). In the original scale, health self-efficacy subscale of CBI shows good reliability (*Cronbach's*

$Alpha > .84$; Sirois, 2003, 2015). For this study, we translated the scale using forward translation. In the current sample, *Cronbach's Alpha* for the translation of the subscale is .783.

Self-compassion

A short version of *Skala Welas Diri* (SWD; Sugianto et al., 2020), an Indonesian version of Self-Compassion Scale (Neff, 2003), was used to measure self-compassion. The selection of items on SWD for the short version was selected according to Self-Compassion Scale–Short Form (SCS-SF; Raes et al., 2011), consisting of 12 items measuring six components of self-compassion (self-kindness, self-judgment, common humanity, isolation, mindfulness, and overidentification). Participants were asked to indicate agreement on each item on a Likert scale ranging from 1 (Almost never) to 5 (Almost always). The long version of SWD shows good composite reliability (*MacDonald's* $\omega = .873$), whereas the original SCS-SF also shows good reliability (*Cronbach's Alpha* $> .60$ for each subscale). *MacDonald's* ω for translated SCS-SF in this sample is .804.

COVID-19 Preventive Behavior

A nine-item self-report questionnaire was developed to measure the incidence of COVID-19 preventive behavior according to WHO suggestion (2020b), such as physical distancing, handwashing, and droplet-avoiding behavior. Each item was responded through a Likert scale ranging from 1 (Never) to 4 (Always). The questionnaire showed adequate reliability in the current sample (*Cronbach's Alpha* = .758). The blueprint of the questionnaire is presented in Table 2.

Table 2.
Blueprint of COVID-19 Preventive Behavior Questionnaire

No.	Item description	Item-total correlation
1.	<i>Dalam seminggu terakhir, saya mencuci tangan secara menyeluruh dengan air dan sabun setiap kali menyentuh/memegang sesuatu.</i> [In the past week, I washed my hands thoroughly with water and soap every time I touch/grab something]	.533
2.	<i>Dalam seminggu terakhir, saya membersihkan tangan dengan cairan dengan kandungan alkohol minimal 60% jika tidak terdapat air dan sabun.</i> [In the past week, I cleaned my hands with a solution containing minimum 60% alcohol when there are no water and soap].	.636
3.	<i>Dalam seminggu terakhir, saya membersihkan permukaan benda-benda dengan disinfektan.</i> [In the past week, I cleaned surfaces with disinfectant].	.562
4.	<i>Dalam seminggu terakhir, ketika saya bersin, saya menutupi mulut saya dengan menggunakan lengan atau tisu.</i> [In the past week, I covered my mouth with elbow or tissue every time I sneeze]	.448
5.	<i>Dalam seminggu terakhir, saya berusaha untuk tidak menyentuh hidung, mata, dan mulut jika belum membersihkan tangan.</i> [In the past week, I tried not to touch my nose, eyes, and mouth when I haven't washed my hands]	.440
6.	<i>Dalam seminggu terakhir, saya menjaga jarak saya dengan orang lain setidaknya 1 meter.</i> [In the past week, I keep my distance with others within at least 1 meter in range].	.523
7.	<i>Dalam seminggu terakhir, saya tetap tinggal di rumah jika tidak ada keperluan mendesak.</i> [In the past week, I stayed at home when there were no urgent matters].	.224
8.	<i>Dalam seminggu terakhir, saya mengenakan masker apabila saya mengalami gejala flu atau sesak nafas.</i> [In the past week, I used mask when I have symptoms of flu or difficulty in breathing].	.426
9.	<i>Ketika saya memiliki gejala demam, sesak nafas, dan batuk, saya membuat janji temu sebelum pergi ke pusat layanan kesehatan terdekat.</i> [If I have fever, difficulty in breathing, and cough, I make an appointment before I go to the nearest healthcare center].	.301

Analysis Technique

Bivariate correlation was used to explore the relationship among measured variables. Multiple regression was used to test the hypothesis that health self-regulation and self-compassion predicts COVID-19 preventive behavior. The test of normality of residuals, homoscedasticity, and multicollinearity were conducted before the multiple regression analysis.

RESULTS

Table 3 summarizes the correlations, means, and standard deviations of the variables.

Table 3.
Correlations, Means, and Standard Deviations of the Measured Variables

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Age	32.224	9.763	-					
2. PB	27.809	4.574	.155**	-				
3. PA	33.219	6.450	.215***	.109*	-			
4. NA	22.940	7.363	-.287***	-.143**	-.316***	-		
5. HSE	36.109	4.945	.139**	.126*	.379***	-.482***	-	
6. SCS	3.446	.582	.136**	.188***	.413***	-.481***	.448***	-

Note: * = Significant at .05 level; ** = Significant at .01 level; *** = Significant at .001 level; PB = COVID-19 Preventive Behavior Questionnaire; PA = Positive Affect; NA = Negative Affect; HSE = Health Self-Efficacy subscale of Control Belief Inventory; SCS = Self-Compassion Scale-Short Form

Bivariate correlations among the variables show that COVID-19 preventive behavior has significant positive correlations with age, positive affect, health self-efficacy, self-compassion and a significant negative correlation with negative affect. These imply that older individuals, individuals with higher levels of positive affect, health self-efficacy, self-compassion and lower levels of negative affect tend to display more frequent COVID-19 preventive behaviors. Self-compassion has significant positive correlations with positive affect, health self-efficacy, and a significant negative correlation with negative affect. Individuals with higher level of self-compassion report higher level of positive affect, health self-efficacy, and lower level of negative affect.

Health self-regulation and self-compassion were independently regressed to COVID-19 preventive behavior. Results of multiple regression of health self-regulation (as indicated by positive affect, negative affect, and health self-efficacy) to COVID-19 preventive behavior show that health self-regulation significantly predicts 2.7% variance of COVID-19 preventive behavior ($F(3,362) = 3.395, p = .018$). Linear regression analysis shows that self-compassion significantly predicts 3.5% variance of COVID-19 preventive behavior ($F(1,364) = 13.345, p < .001$).

Table 4.

Multiple Regression of Variables to COVID-19 Preventive Behavior

Variables	Intercept	R²	ΔR²	F	β	t	Sig.
	23.348	.04	.03	3.778		8.025	<.001
SCS					1.095	2.196	.029
PA					.016	.390	.697
NA					-.034	-.885	.337
HSE					.026	.451	.653

Note: SCS = Self-Compassion Scale-Short Form; PA = Positive Affect; NA = Negative Affect; HSE = Health Self-Efficacy subscale of Control Belief Inventory

Table 4 presents multiple regression from health self-regulation (as indicated by positive affect, negative affect, and health self-efficacy) and self-compassion to COVID-19 preventive behavior. Self-compassion and health self-regulation predict 3% variance of COVID-19 preventive behavior ($F(4,361) = 3.778, p = .005$). The regression equation for self-compassion and health self-efficacy to COVID-19 preventive behavior is Y (COVID-19 preventive behavior) = $23.348 + (1.095 \times \text{self-compassion}) + (.016 \times \text{positive affect}) - (.034 \times \text{negative affect}) + (.026 \times \text{health self-efficacy})$. The results suggest that higher levels of self-compassion and health self-regulation predict higher prevalence of COVID-19 preventive behavior by 3%. However, positive affect, negative affect, and health self-efficacy do not independently predict COVID-19 preventive behavior when they were analyzed with self-compassion. This suggests that when self-compassion is hold constant, positive affect, negative affect, and health self-efficacy individually do not predict COVID-19 preventive behavior. These components of health self-regulation and self-compassion jointly predict COVID-19 preventive behavior.

DISCUSSION

The results showed that health self-regulation and self-compassion predicted COVID-19 preventive behavior among the Indonesian sample. This suggests that higher levels of health self-regulation and self-compassion prompt COVID-19 preventive behavior. This finding confirms previous studies which found that health self-regulation and self-compassion predict health behavior (Biber & Ellis, 2017; Jackson et al., 2010; Osborn et al., 2010; Petrovic et al., 2011; Sirois et al., 2015).

Health self-regulation and self-compassion enable a person to deal with the pandemic's adverse effects and its behavioral consequences. Health self-regulation involves managing negative

affect and improving positive affect, which interplay with health self-efficacy serving as an internal resource in adopting and maintaining a health behavior (Mann et al., 2013), for example the adherence to health protocols to avoid COVID-19 infection. Self-compassion plays an integral part in managing these negative and positive affects and inducing perceived control of the situation (Sirois, 2015). Furthermore, self-compassion accompanied by health self-regulation helps people to focus on their behavior when dealing with negative affect and uncertainty during the pandemic.

Self-compassion is inducing negative emotions that are enacted by stressful situations (Kirschner et al., 2019). Thus, for personal and community protection during the COVID-19 pandemic, individual actively initiates and maintains health behavior. Self-compassion was found related to empathy and prosocial behavior (e.g., Neff & Pommier, 2013; Welp & Brown, 2013). Also, it facilitates coping behavior towards stressor (Neff & Germer, 2017).

This study also found that age is positively correlated with COVID-19 preventive behavior. As age also significantly correlates with health self-regulation and self-compassion, the relationship between age and COVID-19 preventive behavior may be due to the increase of self-compassion and health self-regulation. As a person gets older and experiences many adversities, the person may learn to cope with health-related issues and is more ready to adopt health behavior. Moreover, older age was related to more risk perception and less intention to engage in risky behavior (Bonem et al., 2015). These explain the increasing prevalence of COVID-19 preventive behavior in older participants.

The results suggest that increased health self-regulation and self-compassion predict a higher prevalence of COVID-19 preventive behavior. Interventions to improve health self-regulation and self-compassion may facilitate the management of negative emotions resulting from the pandemic and the engagement to health behavior to flatten the pandemic curve. A study evaluating the effectiveness of such intervention may contribute to the pandemic and prospective communicable disease mitigations.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study found that self-compassion and health self-regulation predicts COVID-19 preventive behavior. Higher levels of self-compassion and health self-regulation predict a higher prevalence of COVID-19 preventive behavior, and vice-versa.

Theoretical Recommendations

Future studies can examine the impact of health self-regulation and self-compassion interventions to COVID-19 or preventive behaviours of other transmissible diseases. Another study may examine the mechanism of how health self-regulation and self-compassion predict COVID-19 preventive behavior. Understanding this mechanism can aid the mitigation of COVID-19 or other transmissible diseases.

Practical Recommendations

Improving the levels of self-compassion and health self-regulation may help in promoting COVID-19 preventive behavior among Indonesians. Health education about self-compassion and health self-regulation may increase these internal resources, followed by self-compassion and health self-regulation training. Kelly et al. (2010) found that training cigarette smokers in regulating themselves through self-compassion resulted in the reduction of daily cigarette consumption. Similar to that finding, self-compassionate self-regulation training may be designed to promote COVID-19 preventive behavior.

Social and religious institutions, which hold important position in Indonesian society, may become agents to promote self-compassion and health self-regulation through social activities. Online activities such as religious sermons or gathering may incorporate self-compassion and health self-regulation to aid emotion regulation in obeying COVID-19 health protocols. These activities may effectively deliver self-compassion and health self-regulation in accessible manner.

ACKNOWLEDGEMENT

We thank Dr. Fuschia Sirois for permission to use the Control Beliefs Inventory. We also thank Fr. Antonius Sumarwan, SJ, and Dr. Michael Liem for proofreading the manuscript.

FUNDING

This research received no specific funding from any institution.

COMPLIANCE WITH ETHICAL STANDARD

Ethical Statement

All procedures performed in this study were in accordance with the 1964 Helsinki Declaration and its amendments or with comparable ethical standards. The ethical aspect of this study has been reviewed and approved by Center for Research and Community Development, Universitas Pelita Harapan (Approval No: P-098-M/FPsi/XI/2020). Informed consent has been obtained from all participants in this study.

Conflict of Interest

The authors pronounce no conflict of interest in this research.

Data Availability

The datasets used in this study are available from the corresponding author through email.

REFERENCES

- Anderson, R. M., Heesterbeek, H., Klinkenberg, D., & Hollingsworth, T. D. (2020). How will country-based mitigation measures influence the course of the COVID-19 epidemic? *The Lancet*, 395(10288), 931-934. [https://doi.org/10.1016/S0140-6736\(20\)30567-5](https://doi.org/10.1016/S0140-6736(20)30567-5)
- Arbar, T. F. (2020, July 11). *Terungkap! 2 alasan penambahan kasus COVID-19 tinggi di RI*. CNBC Indonesia. <https://www.cnbcindonesia.com/news/20200711194818-4-171961/terungkap-2-alasan-penambahan-kasus-covid-19-tinggi-di-ri>
- Ayed, M. B., & El Aoud, N. (2020). Negative emotions and consumers' preventive health behavior: a multi-method exploratory study. *International Journal of Pharmaceutical and Healthcare Marketing*, 15(1), 83-105. <http://dx.doi.org/10.1108/IJPHM-09-2019-0063>
- Baumeister, R. F., Zell, A. L., & Tice, D. M. (2007). How emotions facilitate and impair self-regulation. In J. J. Gross (Ed.), *Handbook of emotion regulation, 1st edition* (pp. 408-426). Guilford Press.
- Biber, D. D., & Ellis, R. (2017). The effect of self-compassion on the self-regulation of health behaviors: A systematic review. *Journal of Health Psychology*, 24(14), 1-12. <https://doi.org/10.1177/1359105317713361>
- Bonem, E. M., Ellsworth, P. C., & Gonzalez, R. (2015). Age differences in risk: Perceptions, intentions, and domains. *Journal of Behavioral Decision Making*, 28(4), 317-330. <https://doi.org/10.1002/bdm.1848>
- Brion, J. M., Leary, M. R., & Drabkin, A. S. (2014). Self-compassion and reactions to serious illness: The case of HIV. *Journal of Health Psychology*, 19(2), 218-229. <https://doi.org/10.1177/1359105312467391>
- Brown, S. L., Hughes, M., Campbell, S., & Cherry, M. G. (2019). Could worry and rumination mediate relationships between self-compassion and psychological distress in breast cancer survivors? *Clinical Psychology & Psychotherapy*, 27(1), 1-10.

<https://doi.org/10.1002/cpp.2399>

- Campos-Mercade, P., Meier, A. N., Schneider, F. H., & Wengström, E. (2020). Prosociality predicts health behaviors during the COVID-19 pandemic. *Journal of Public Economics*, *195*, 104367. <https://doi.org/10.1016/j.jpubeco.2021.104367>
- Center for Strategic & International Studies. (2020, September 29). *Southeast Asia Covid-19 tracker*. <https://www.csis.org/programs/southeast-asia-program/southeast-asia-covid-19-tracker-0>
- Fernández-Abascal, E. G., & Martín-Díaz, M. D. (2015). Dimensions of emotional intelligence related to physical and mental health and to health behaviors. *Frontiers in Psychology*, *6*(317), 1-15. <https://doi.org/10.3389/fpsyg.2015.00317>
- Gerend, M. A., & Shepherd, J. E. (2012). Predicting human papillomavirus vaccine uptake in young adult women: Comparing the health belief model and theory of planned behavior. *Annals of Behavioral Medicine*, *44*(2), 171-180. <https://doi.org/10.1007/s12160-012-9366-5>
- Hagger, M. S. (2010). Self-regulation: An important construct in health psychology research and practice. *Health Psychology Review*, *4*(2), 57-65. <https://doi.org/10.1080/17437199.2010.503594>
- Haliwa, I., Lee, J., Wilson, J., & Shook, N. J. (2020). Mindfulness and engagement in COVID-19 preventive behaviour. *Preventive Medicine Reports*, *20*, 101246. <https://doi.org/10.1016/j.pmedr.2020.101246>
- Hall, C. W., Row, K. A., Wuensch, K. L., & Godley, K. R. (2013). The role of self-compassion in physical and psychological well-being. *The Journal of Psychology*, *147*(4), 311-323. <https://doi.org/10.1080/00223980.2012.693138>
- Hamdi, I. (2020, July 26). *Masyarakat abai protokol kesehatan COVID-19, ini kata psikolog*. Tempo. <https://metro.tempo.co/read/1369244/masyarakat-abai-protokol-kesehatan-covid-19-ini-kata-psikolog/full&view=ok>
- Hennessy, E. A., Johnson, B. T., Acabchuk, R. L., McCloskey, K., & Stewart-James, J. (2020). Self-regulation mechanism in health behavior change: A systematic meta-review of meta-analyses, 2006-2017. *Health Psychology Review*, *14*(1), 6-42. <https://doi.org/10.1080/17437199.2019.1679654>
- Homan, K. J., & Sirois, F. M. (2017). Self-compassion and physical health: Exploring the roles of perceived stress and health-promoting behaviors. *Health Psychology Open*, *4*(2), Article 2055102917729542. <https://doi.org/10.1177/2055102917729542>
- Horan, K. A., & Taylor, M. B. (2018). Mindfulness and self-compassion as tools in health behavior

- change: An evaluation of a workplace intervention pilot study. *Journal of Contextual Behavioral Science*, 8, 8-16. <https://doi.org/10.1016/j.jcbs.2018.02.003>
- Inwood, E., & Ferrari, M. (2018). Mechanism of change in the relationship between self-compassion, emotion regulation, and mental health: A systematic review. *Applied Psychology: Health and Well-Being*, 10(2), 215-235. <https://doi.org/10.1111/aphw.12127>
- Jackson, E. S., Tucker, C. M., & Herman, K. C. (2010). Health value, perceived social support, and health self-efficacy as factors in health-promoting lifestyle. *Journal of American College Health*, 56(1), 69-74. <https://doi.org/10.3200/JACH.56.1.69-74>
- Kelly, A. C., Zuroff, D. C., Foa, C. L., & Gilbert, P. (2010). Who benefits from training in self-compassionate self-regulation? A study of smoking reduction. *Journal of Social and Clinical Psychology*, 29(7), 727-755. <https://doi.org/10.1521/jscp.2010.29.7.727>
- Kirschner, H., Kuyken, W., Wright, K., Roberts, H., Brejcha, C., & Karl, A. (2019). Soothing your heart and feeling connected: A new experimental paradigm to study the benefits of self-compassion. *Clinical Psychological Science*, 7(3), 545-565. <https://doi.org/10.1177/2167702618812438>
- Komite Penanganan COVID-19 dan Pemulihan Ekonomi Nasional. (2020, July 29). *Peta sebaran*. <https://covid19.go.id/peta-sebaran>
- Mandailing, M. (2020, September 3). *Tim ahli COVID-19: Masyarakat semakin abaikan protokol kesehatan*. <https://sumut.antaranews.com/berita/328810/tim-ahli-covid-19-masyarakat-semakin-abaikan-protokol-kesehatan>
- Mann, T., de Ridder, D., & Fujita, K. (2013). Self-regulation of health behavior: Social psychological approaches to goal setting and goal striving. *Health Psychology*, 32(5), 487-498. <https://doi.org/10.1037/a0028533>
- Neff, K. D. (2003). Development and validation of a scale to measure self-compassion. *Self and Identity*, 2(3), 223-250. <https://doi.org/10.1080/15298860309027>
- Neff, K. D., & Germer, C. (2017). Self-compassion and psychological well-being. In E. M. Seppälä, E. Simon-Thomas, S. L. Brown, M. C. Worline, C. D. Cameron, & J. R. Doty. (Eds.), *The Oxford handbook of compassion science* (pp. 478-498). Oxford University Press.
- Neff, K. D., & Pommier, E. (2013). The relationship between self-compassion and other-focused concern among college undergraduates, community adults, and practicing meditators. *Self and Identity*, 12(2), 160-176. <https://doi.org/10.1080/15298868.2011.649546>
- Osborn, C. Y., Cavanaugh, K., Wallston, K. A., & Rotman, R. L. (2010). Self-efficacy links health

- literacy and numeracy to glycemic control. *Journal of Health Communication*, 15, 146-158. <https://doi.org/10.1080/10810730.2010.499980>
- Petrovic, K., Burney, S., & Fletcher, J. (2011). The relationship of knowledge, health value and health self-efficacy with men's intentions to receive the human papillomavirus (HPV) vaccine. *Journal of Health Psychology*, 16(8), 1198-1207. <https://doi.org/10.1177/1359105311402861>
- Prem, K., Liu, Y., Russell, T. W., Kucharski, A. J., Eggo, R. M., & Davies, N. (2020). The effect of control strategies to reduce social mixing on outcomes of the COVID-19 epidemic in Wuhan, China: A modelling study. *The Lancet Public Health*, 5(5), e261-e270. [https://doi.org/10.1016/S2468-2667\(20\)30073-6](https://doi.org/10.1016/S2468-2667(20)30073-6)
- Purnamasari, D. M. (2020, September 4). *KawalCovid-19: Positive rate di Indonesia menunjukkan dua hal ini...* Kompas. <https://nasional.kompas.com/read/2020/09/04/11131251/kawalcovid-19-positive-rate-di-indonesia-menunjukkan-dua-hal-ini?page=all>
- Putra, I. G. (2020, July 21). *Warga abai protocol kesehatan, pemkot Tangerang Selatan dituding tak serius tegakkan aturan PSBB* [Citizen ignorant of health protocols, Tangerang Selatan local authority accused of not serious in reinforcing lockdown regulation]. Kompas. <https://kompas.id/baca/metro/2020/07/21/warga-abai-protokol-kesehatan-pemkot-tangsel-dituding-tak-serius-tegakkan-aturan-psbb/>
- Raes, F., Pommier, E., Neff, K. D., & Van Gucht, D. (2011). Construction and factorial validation of a short form of the Self-Compassion Scale. *Clinical Psychology and Psychotherapy*, 18, 250-255. <https://doi.org/10.1002/cpp.702>
- Rajkumar, R. P. (2020). COVID-19 and mental health: A review of existing literature. *Asian Journal of Psychiatry*, 52, 102066. <https://doi.org/10.1016/j.ajp.2020.102066>
- Rizal, J. G. (2020, July 26). *Positivity rate COVID-19 Indonesia 12,3 persen, peringkat 5 se-Asia* [Positivity rate COVID-19 Indonesia 12.3 percent, 5th rank in Asia]. Kompas. <https://www.kompas.com/tren/read/2020/07/26/070000565/positivity-rate-covid-19-indonesia-12-3-persen-peringkat-5-se-asia?page=all>
- Schoenefeld, S. J., & Webb, J. B. (2013). Self-compassion and intuitive eating in college women: Examining the contribution of distress tolerance and body image acceptance and action. *Eating Behaviors*, 14, 493-496. <https://doi.org/10.1016/j.eatbeh.2013.09.001>
- Schwarzer, R. (2011). Health behavior change. In H. S. Friedman (Ed.), *The Oxford handbook of*

- health psychology* (pp. 591-611). Oxford University Press.
- Schwarzer, R., & Luszczynska, A. (2008). *Perceived self-efficacy*. National Cancer Institute. <https://cancercontrol.cancer.gov/brp/research/constructs/self-efficacy>
- Sirois, F. M. (2003). *The Control Beliefs Inventory* [Unpublished manual]. Department of Psychology, The University of Sheffield.
- Sirois, F. M. (2015). A self-regulation resource model of self-compassion and health behavior intentions in emerging adults. *Preventive Medicine Reports*, 2, 218-222. <https://doi.org/10.1016/j.pmedr.2015.03.006>
- Sirois, F. M., Molnar, D. S., & Hirsch, J. K. (2015). Self-compassion, stress, and coping in the context of chronic illness. *Self and Identity*, 14(3), 334-347. <https://doi.org/10.1080/15298868.2014.996249>
- Sorokowska, A., Sorokowski, P., Hilpert, P., Cantarero, K., Frackowiak, T., ... Pierce, J. D. (2017). Preferred interpersonal distances: A global comparison. *Journal of Cross-Cultural Psychology*, 48(4), 577-592. <https://doi.org/10.1177/0022022117698039>
- Sugianto, D., Suwartono, C., & Sutanto, S. H. (2020). Reliabilitas dan validitas Self-Compassion Scale versi bahasa Indonesia. *Jurnal Psikologi Ulayat*, 7(2), 177-191. <https://doi.org/10.24854/jpu107>
- Terry, M. L., & Leary, M. R. (2011). Self-compassion, self-regulation, and health. *Self and Identity*, 10(3), 352-362. <https://doi.org/10.1080/15298868.2011.558404>
- Terry, M. L., Leary, M. R., Mehta, S., & Henderson, K. (2013). Self-compassionate reactions to health threats. *Psychology Bulletin*, 39(7), 911-926. <https://doi.org/10.1177/0146167213488213>
- Torales, J., O'Higgins, M., Castaldelli-Maia, J. M., & Ventriglio, A. (2020). The outbreak of COVID-19 coronavirus and its impact on global mental health. *International Journal of Social Psychiatry*, 66(4), 317-320. <https://doi.org/10.1177/0020764020915212>
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063-1070. <https://doi.org/10.1037//0022-3514.54.6.1063>
- Welp, L. R., & Brown, C. M. (2013). Self-compassion, empathy, and helping intentions. *The Journal Positive Psychology*, 9(1), 54-65. <https://doi.org/10.1080/17439760.2013.831465>
- Wilson, A. (2020, April 2). *The countries that are succeeding at flattening the curve*. Foreign Policy. <https://foreignpolicy.com/2020/04/02/countries-succeeding-flattening-curve-coronavirus->

testing-quarantine/

World Health Organization. (2020a, September 30). *WHO Coronavirus Disease (COVID-19) dashboard*.

https://covid19.who.int/?gclid=CjwKCAjw2dD7BRASEiwAWCtCb0BEZE4YlqO-mBF7aJ-yrH2nJRvDVnT2l_Zsn9CAnpa3nahvEAHhRhoCX1YQAvD_BwE

World Health Organization. (2020b, April 29). *Coronavirus disease (COVID-19) advice for public*.
<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>

Yusainy, C., Karti, P. I. M., Ikhsan, R. R., & Hikmiah, Z. (2019). Left unheard: Detecting mood and aggression through ostracism and trait mindfulness. *Anima Indonesian Psychological Journal*, 32(2), 93-104. <https://doi.org/10.24123/aipj.v34i2.2205>

Yusainy, C., & Wicaksono, W. (2019). Post-depletion aggression restrained: Replicability of brief mindfulness induction in Indonesian sample. *Jurnal Psikologi*, 46(1), 1-18. <https://doi.org/10.22146/jpsi.36103>