

The Adaptation of COVID-19 Anxiety Syndrome Scale (C-19ASS) Measurement Tool in Indonesian Language

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ABSTRACT

Toward the start of 2020, the world was stunned by the rise of a pandemic, namely COVID-19. The anxiety that individuals experience due to COVID-19 affects their social functioning. As of now Indonesia does not have an ideal health system in facilitating the communities, especially in handling the mental health problems during this pandemic. Different estimating instruments were created to measure psychological distress brought by COVID-19. However, no measurement tool measures individual coping in the face of COVID-19 pandemic. The C-19ASS aims to map individual coping mechanisms in the context of COVID-19, which in turn can see indications of anxiety syndrome related to COVID-19. The discovery of violations that often occurs in implementing health protocols makes researchers feel the need to adapt the C-19ASS in Indonesian language. The sample consisted of 276 participants who live in Jakarta, Bogor, Depok, Tangerang, and Bekasi (JaBoDeTaBek). The psychometric test results show that all C-19ASS items are said to be valid and reliable. The result of factor analysis shows the emergence of one additional factor in coping which is owned by Indonesian citizens, this coping consists of avoidance, perseverance, and checking.

Keywords: COVID-19 Anxiety Syndrome, COVID-19, Anxiety Syndrome

1. INTRODUCTION

The spread of COVID19 has been a massive worldwide issue since early 2020 [1]. More than 404,048 cases have been identified since January 3rd to October 29th, 2020 (COVID-19 Handling Task Force, 2020) [2]. Indonesia happened to be the first country with the most elevated cases of COVID-19 Southeast Asia [3]. The rapid transmission of the COVID-19 virus has prompted the government to create policies by implementing PSBB to encourage massive social distancing [4]. Thus the expanding number of psychological distress as the side effect of social distancing and the threats from the crisis[5]. People have shown confusion, anxiety, and fear in order to cope with the crisis and the lack of social contact [6]. Maladaptive coping has caused individual's poor anxiety management when facing a crisis [7]. The level of anxiety experienced by the public increases when there is a lot of information received regarding this outbreak, or a virus that threatens the lives of many people [9]. The more vulnerable they perceive themselves to get infected by the virus, the more anxious they might have felt [8, 10]. Anxiety is an unpleasant, unsettling feeling that lasts continuously and drains energy [11]. Anxiety can be experienced by anyone regardless of their age, as the

COVID-19 pandemic has the same impact and challenges on society [8].

Providing an adequate health system is one of the essential things that Indonesia still needs to work on. [12]. Abdullah [13] said that Indonesia still has a lot to work on when it comes to dealing with psychological health problems that occur due to COVID19. Indonesia also still has a low awareness in preventing the spread of COVID-19 [14]. Many people still happen to proceed with various kinds of violations regarding the policy to carry out social distancing. The utilization of masks is likewise regularly violated by the community [15]. With an inadequate health system and a poor attitude toward health protocols, this issue should be our main concern in order to mitigate the virus' spread.

The degree of consistency toward policies in managing COVID-19 is influenced by how people perceive COVID-19. Their perspective is influenced by how they feel psychologically threatened by the spread of the virus [14]. Someone who feels threatened by the presence of COVID-19, will tend to lead them to maladaptive coping such as violating government's policies. It is important to see how a person is dealing with COVID-19 and need to be adapted to the context of the pandemic itself [16]. When addressing mental health issues, Indonesia cannot rely

solely on pre-existing psychological test tools. Nikčević & Spada [17] fostered the COVID-19 Anxiety Syndrome Scale (C-19ASS) which centers around seeing at individuals' coping with anxiety during a pandemic. The measurement tool has two dimensions, namely perseverance and avoidance. The C-19ASS has been proven to be valid and reliable in measuring anxiety, and the C-19ASS measurement tool has been adjusted to a person's anxiety condition when facing a pandemic. The purpose of the C-19ASS measurement tool is to see how far an individual is coping when facing a pandemic situation. Among all anxiety measurement tools during the COVID-19 pandemic, the C-19ASS is the only tool that has a multidimensional factor in its measuring instrument. C-19ASS can identify whether a COVID-19 'anxiety syndrome' is characterized by threat avoidance, screening, worrying, and monitoring (combined). These identifications are found in researches of psychopathology [20-22] a set of maladaptive coping forms may contribute an important role in psychological distress that persist. Therefore researchers have considered C-19ASS as the most comprehensive measuring tool that could be applied in Indonesia.

This research focuses on the process of measuring instruments to Indonesian citizens living in the Greater Jakarta area. The selection of areas for target participants based on the division of four zones that have been divided by the Task Force (Satgas) dealing with COVID-19, based on three indicators, namely epidemiological indicators, public health surveillance indicators, and community service indicators. Our main focuses are divided into four zones. They are called red zones (high risk), orange zone (moderate risk), yellow zone (low risk), and green zone (no cases and no impact). Based on these zones, until June 21, 2021, the COVID-19 Task Force noted that 11 provinces in Indonesia were included in the red zone. In DKI Jakarta Province, there are 2 risk zones in DKI Jakarta Province, namely red for West Jakarta, North Jakarta, East Jakarta, South Jakarta, and Central Jakarta. Orange for the Thousand Islands. DKI Jakarta is the county with the highest cases of COVID-19 in Indonesia, with 482,264 cases (23.9%) [23]. In addition, DKI Jakarta with fairly high cases is a place of work for those who reside around Jakarta, namely Bogor, Depok, Tangerang, and Bekasi [24]. The areas of Depok, Tangerang, and the city of Bekasi are also included in the red zone, while Bogor is included in the orange zone [23]. Based on this phenomenon, the researchers decided to adapt the C-19ASS measuring instrument to the Indonesian people living in the Greater Jakarta area.

1.1. Related Work

According to the topic, this work is related with these works below.

1.1.1. Coronavirus Anxiety Scale (CAS)

Along with the development of a measuring tool that sees psychological stress as the impact of the crisis during the pandemic, Lee [18] created a measuring instrument to measure anxiety, namely the Coronavirus Anxiety Scale (CAS). CAS research was based on 775 adults with anxiety about coronavirus. It also demonstrated both validity and reliability. Elevated CAS score related to diagnosis of coronavirus, extreme hopelessness, suicidal ideation, and attitudes toward President Trump and Chinese products. [18].

1.1.2. COVID-19 Stress Scale (CSS)

During a pandemic, many individuals show fear and anxiety-related stress responses which include: fear of infection, fear of contact with objects or surfaces that may be contaminated. Another fear that may arise is the fear of strangers who may carry the infection. Fear of socioeconomic consequences such as losing a job. Fear that can trigger stressful and traumatic behavior so that you feel bad dreams and disturbed thoughts. CSS was developed to measure these features and to better understand and assess the stresses associated with COVID-19.

Taylor et al [19] prepared a measurement tool named The COVID-19 Stress Scales (CSS) that has five dimensions to measure stress and anxiety related to COVID-19. Those dimensions are: danger and contamination fears contain 12 items, fears about economic consequences contain 6 items, xenophobia contain 6 items, compulsive checking and reassurance seeking contain 6 items, and traumatic stress symptoms about COVID-19 contain 6 items. All of the items in each dimension were rated from 0 (not at all) to 4 (extremely) on a 5-point scale. The purpose of this tool is to make them readily adapted if in the future this pandemic happens. The CSS has been demonstrated both validity and reliability. CSS was chosen to be a measuring tool for convergent validity because it has the same concept as C-19ASS, namely seeing individuals who experience anxiety during the COVID-19 period will show certain social behaviors.

1.1.3. COVID Peritraumatic Distress Inventory (CPDI)

COVID Peritraumatic Distress Inventory (CPDI) is a measuring tool that originated from a study which was a national survey of psychological distress in China. It was distributed in the general population during the COVID-19 pandemic developed by Qiu, Shen, Zhao, Wang, Xie & Xu [25]. CPDI makes it possible to identify vulnerable individuals and find out if they need psychological intervention [25]. This questionnaire was designed to measure peritraumatic psychological distress during COVID-19 epidemic [25] in a short time of approximately 10 minutes.

CPDI in the adaptation of the C-19ASS estimating instrument is utilized in discriminant legitimacy. CPDI was picked to be discriminant in light of the fact that, similar to the C-19ASS, it also measures stress but looks more at the frequency of anxiety, depression and fear experienced by individuals. In short, of the entire CPDI domain, only the topic of stress overlaps with the C-19ASS. In detail, the CPDI asks about the frequency of anxiety, depression, specific phobias, cognitive changes, avoidance and compulsive behavior. The score obtained ranges from 0 to 100. Mild to moderate distress scores between 28 to 51. For the indication of severe level scores above 52.

1.2. Our Contribution

Comparing C-19ASS to several measuring tools that measure anxiety during the COVID-19 pandemic, we found that only the C-19ASS has a multidimensional measuring instrument, where the C-19ASS measuring instrument consists of two factors, namely perseveration and avoidance. The C-19ASS measurement tool emphasizes the importance of classifying a person's character or type of coping when dealing with COVID-19 anxiety. C-19ASS can recognize whether 'anxiety syndrome' might emerge by threat avoidance, screening, worrying, and monitoring (combined). As per research in psychopathology [20-22] grouping of maladaptive types of adapting may assume a significant part in the persistence of psychological distress. Thus, the COVID-19 anxiety syndrome should be separated conceptually and psychometrically from the COVID-19 threat, fear and anxiety, assessing the characteristics of the experience of the COVID-19 threat rather than the response. Nikcevic & Spada [17] stated that C-19ASS was able to predict individual coping in dealing with anxiety from COVID-19. That prediction was created from the demographics (age, gender and risk status), personality and threat perception and also able to predict adjustment in work and social for the new normal circumstances. The C-19ASS measurement tool aims to expand responses in the mental health that are related to the COVID-19 pandemic, with creating and developing a measuring tool that identifies the presence of anxiety syndrome (coping) associated with COVID-19 [17]. The development of the C-19ASS measuring tool also aims to see the forms of coping formed by each individual, such as perseveration or avoidance. Based on these reasons, we see that the C-19ASS is the most comprehensive measurement tool to be applied in Indonesia.

1.3. Paper Structure

The remainder of the paper is arranged as follows. Section 2 explains about the introductory used in this paper, that includes methods, results, and discussion. Discussion presents the present direction for future research. Lastly, Section 3 concludes the paper and the final items for C-

19ASS Indonesian Adaptation are also shown at the end of the paper.

2. BACKGROUND

2.1. Methods

The adaptation of COVID-19 Anxiety Syndrome Scale in Indonesian Language was implemented to complete the intervention of the psychological effects due to the transmission of COVID-19, particularly in Indonesia. The population of this study are people who reside in parts of Indonesia, that is DKI Jakarta, Bogor, Depok, Tangerang, Bekasi, and Depok (JaBoDeTaBek) and still in their productive age, ranging from 18 to 59 years old. To obtain the participants, we use a non-probability convenience sampling technique. Total of 276 participants participated in this study. C-19ASS is a multidimensional measurement tool consisting of two domains, avoidance and perseveration. The measurement tool has 9 items and uses 5-point likert scale (ranging from 0-4) as the answer choices. For convergent validity, we use COVID-19 Stress Scale (CSS), we test COVID-19 Peritraumatic Distress Index (CPDI) as the discriminant validity. Other psychometric tests, such as normality test, item analysis, confirmatory factor analysis, and reliability were used to test the feasibility of the Indonesian's Adaptation of C-19ASS measurement tool.

2.2. Results

Shapiro-Wilk Normality Test showed the data distribution is not normal for both dimensions, avoidance (Shapiro-Wilk $W= 0.949$, $p<0.001$) and perseveration (Shapiro-Wilk $W= 0.982$, $p= 0.001$). There are also no significant differences between male and female in this set of data (avoidance, $p= 0.015$; perseveration, $p=0.241$). Based on internal consistency with the Spearman Rank-Order Correlation Test, all items in C-19ASS are valid. We run correlation tests between C-19ASS and CSS as convergent external validity testing. The avoidance dimension is correlated significantly with some of the CSS dimensions. Dangerous ($rs(274)= 0.295$, $p<.001$), xenophobia ($rs(274)= 0.198$, $p<.001$), and contamination ($rs(274)= 0.231$, $p<.001$). Meanwhile, the perseveration dimension is strongly correlated with all of the CSS dimensions.

Table 1 Internal Consistency Results

Dimension					
Avoidance			Perseveration		
Item	rs	p-value	Item	rs	p-value
A1	0.430	<.001	P1	0.474	<.001
A2	0.600		P2	0.401	
A3	0.390		P3	0.470	

	P4	0.650	
	P5	0.574	
	P6	0.521	

We also run correlation tests between C-19ASS and CPDI as discriminant external validity testing. Both dimensions are strongly correlated with CPDI (avoidance, $r_{s(274)} = 0.142, p = 0.018$; perseverance, $r_{s(274)} = 0.379, p < .001$).

Table 2 Exploratory Factor Analysis Results

	Factor			Uniqueness
	1	2	3	
A1			0.561	0.660
A2			0.857	0.255
A3	0.410		0.421	0.638
P1		0.771		0.454
P2	0.492			0.704
P3	0.675			0.556
P4		0.756		0.272
P5	0.485	0.311		0.531
P6	0.565			0.589

Based on the EFA for internal validity testing, we found three factors in C-19ASS. There are four items in the first factor which are P2, P3, P5 and P6. For the second factor there are two items: P1 and P4. There are three items in the third factor: A1, A2, and A3.

Table 3 Confirmatory Factor Analysis Results

CFI	TLI	SRMR	RMSEA	RMSEA 90% CI	
				Upper	Lower
0.936	0.903	0.0649	0.0763	0.0544	0.0989

Based on confirmatory factor analysis we found the CFI value is 0.936, the TLI value is 0.903, and the RMSEA value is 0.0763. Based on these values, our model meets the criteria for satisfactory fit [26].

Table 4 Reliability Testing Results

	M	SD	Cronbach's alpha
Scale	2.10	0.767	0.775

Based on the reliability testing, C-19ASS is reliable with Cronbach's alpha value 0.775

2.3. Discussion

Avoidance and perseverance are the two domains of the C-19ASS. Avoidance is a condition when individuals are faced with a problem and tend to avoid it or stay away from the problem. The form of behavior that avoids public

places or things that can transmit COVID-19 has emerged in Indonesia. Other behaviors that arise are related to behavior that shows concern or anxiety about things that are experienced by people around them and related to COVID-19. The habits that exist in the community, especially how to solve problems related to the spread of COVID-19, indirectly show people's behavior when dealing with COVID-19.

The context of Indonesian society influences booth domains in C-19ASS, particularly perseverance. The researchers encountered on the items were " I have tested the symptoms of COVID-19 " and " I have checked my relatives and loved ones to detect the symptoms of COVID-19". Previous journals stated that these two items describe someone reviewing regularly because they are concerned about the spread of COVID-19. The findings, Indonesian people have a different attitude when worrying about the spread of COVID-19. Fear of being ostracized if had positive COVID test results is a trend found. One of the reasons for this is the government policy that at the time of data collection did not require every citizen to conduct an independent examination unless they were out of town. Therefore, the researcher suggests separating the two elements into several factors.

3. CONCLUSION

In adapting C-19ASS in Indonesia, it is necessary to consider other factors besides avoidance and perseverance. Based on the results obtained from the adaptation of the C-19ASS measuring instrument in Indonesian, the researchers obtained three factors that represent the anxiety syndrome experienced by Indonesians in dealing with the spread of COVID-19. These three factors are different from the factors that were originally owned by the C-19ASS measuring instrument. From the results of adaptation, the third factor consists of two items related to checking for COVID-19 infection which was previously part of perseverance, namely "I have checked myself for symptoms of COVID-19" and "I have checked family members and loved ones for symptoms. COVID-19". Therefore, the three factors in C-19ASS Indonesian Version are avoidance, perseverance, and checking.

COVID-19 Anxiety Syndrome Scale (C19ASS) Indonesian Version

Berikut merupakan serangkaian pernyataan mengenai cara masyarakat dalam menghadapi ancaman virus Corona (COVID-19). Silahkan Anda pilih pernyataan sesuai dengan diri Anda selama dua minggu terakhir.

0 = Tidak Pernah ; 1 = Jarang ; 2 = Beberapa Hari ; 3 = Lebih dari 7 Hari ; 4 = Setiap Hari

Item	Statements
1	Saya senantiasa menghindari penggunaan transportasi publik karena khawatir terjangkit COVID-19.
2	Saya sudah memeriksa diri terhadap gejala-gejala COVID-19.
3	Saya senantiasa menghindari pergi ke tempat-tempat publik (pasar, taman) karena khawatir terjangkit COVID-19.
4	Saya merasa gelisah karena kemungkinan tidak menaati pedoman <i>Social Distancing</i> / Pembatasan Sosial secara ketat.
5	Saya selalu menghindari menyentuh benda di area publik karena khawatir terjangkit COVID-19.
6	Saya telah membaca berita yang berkaitan dengan COVID-19 akibat terlibat dalam pekerjaan (seperti menulis <i>email</i> , mengerjakan dokumen <i>word</i> atau <i>spreadsheet</i>).
7	Saya telah memeriksa anggota keluarga dan orang terkasih terkait gejala COVID-19.
8	Saya telah memperhatikan orang lain yang menunjukkan kemungkinan gejala COVID-19.
9	Saya sudah membayangkan apa yang akan terjadi terhadap anggota keluarga saya jika mereka terjangkit COVID-19.

Factor 1 (Avoidance): 1, 3, 5

Factor 2 (Perseveration): 4, 6, 8, 9

Factor 3 (Checking): 2, 7

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REFERENCES

[1] WHO, Coronavirus disease (COVID-19) pandemic, 2020

[2] M.A. Shereen, S. Khan, A. Kazmi, N. Bashir, R. Siddique, COVID-19 infection: Emergence, transmission, and characteristics of human coronaviruses, *Journal of advanced research* (2020), 91-98. DOI: <https://doi.org/10.1016/j.jare.2020.03.005>

[3] T. Singhal, A review of coronavirus disease-2019 (COVID-19), *The Indian Journal of Pediatrics* 87 (2020). DOI:10.1007/s12098-020-03263-6

[4] Covid-19 Handling Task Force, Peta sebaran COVID- 19. 2020

[5] Ministry of Health Regulation, Permenkes No. 9 tentang pedoman pembatasan sosial berskala besar dalam rangka percepatan penanganan Coronavirus Disease 2019 (COVID-19). (2020)

[6] D. Roy, S. Tripathy, S. K. Kumar, N. Sharma, S. Verma, V. Kaushal, Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. *Asian journal of psychiatry*. 51 (2020). DOI: 10.1016/j.ajp.2020.102083

[7] WHO, SARS outbreak contained worldwide (2005)

[8] M. R. Rinaldi, R. Yuniasanti, in: D.H. Santoso, A. Santoso, Kecemasan pada masyarakat saat masa pandemi COVID-19 di Indonesia, COVID-19 dalam ragam tinjauan perspektif, 2020, MBridge Press, Yogyakarta. ISBN: 978-623-7587-99-6 (1)

[9] G. Landi, K. I., Pakenham, G. Boccolini, S. Grandi, E. Tossani, Health anxiety and mental health outcome during COVID-19 lockdown in Italy: The mediating and moderating roles of psychological flexibility, *Frontiers in Psychology* (2020). DOI: 10.3389/fpsyg.2020.02195

[10] L. Fitria, Cognitive behavior therapy counseling untuk mengatasi anxiety dalam masa pandemi Covid-19, *Jurnal pendidikan & konseling*. Vol. 10 (2020)

[11] S. Rachman, *Clinical psychology a modular course: Anxiety*, 2ed, Psychological Press, New York, 2004.

[12] S. Setiati, M. Azwar, COVID-19 and Indonesia, *Acta Medica Indonesiana*. Vol. 52, 1. 2020

[13] I. Abdullah, COVID-19: Threat and fear in Indonesia, *Psychological Trauma: Theory, research, practice, and policy* 12(5), 2020, pp. 488-490. DOI: <http://dx.doi.org/10.1037/tra0000878>

[14] S. Purnama, D. Susanna, Attitude to COVID-19 prevention with large-scale social restrictions (PSBB) in Indonesia: Partial least squares structural equation modeling, *Front public health* (2020). DOI: 10.3389/fpubh.2020.570394

[15] D. Sari, R. Amelia, R. Dharmajaya, L. Sari, N. Fitri, Positive correlation between general public knowledge and attitudes regarding COVID-19 outbreak 1 month after first cases reported in Indonesia, *J*

Community health (2020). DOI: 10.1007/s10900-020-00866-0

[16] R. Ransing, R. Ramalho, L. Orsolini, F. Adiukwu, J.M. Gonzalez-Diaz, A. Larnaout, M. Pinto da Costa, P. Grandinetti, D.G. Bytyci, M. Shalbafan, I. Patil, M. Nofal, V. Pereira-Sanchez, O. Kilic, Can COVID-19 related mental health issues be measured? *Brain behavior immun*, 88, 2020. pp. 32-34. DOI: 10.1016/j.bbi.2020.05.049

[17] A. Nikcevic, M. Spada, The COVID-19 anxiety syndrome scale: development and psychometric properties, *Psychiatry research*. Vol. 29. (2020). DOI: 10.1016/j.psychres.2020.113322

[18] S. Lee, Coronavirus anxiety scale: a brief mental health screener for COVID-19 related anxiety, *Death Studies*. Vol. 44 (2020). 1-9. DOI: 10.1080/07481187.2020.1748481

[19] S. Taylor, C.A. Landry, M.M. Paluszek, T.A. Fergus, D. McKay, G.J.G. Asmundson, Development and initial validation of the COVID Stress Scale. *Journal of Anxiety disorder*. (2020). DOI: 10.1016/j.janxdis.2020.102232

[20] D.H. Barlow, L.B. Allen, M.L. Choate, Toward a unified treatment for emotional disorders, *Behavior therapy*. 35. (2004). pp. 205-230. DOI: [https://doi.org/10.1016/S0005-7894\(04\)80036-4](https://doi.org/10.1016/S0005-7894(04)80036-4)

[21] S.C. Hayes, Acceptance and commitment therapy and the new behavior therapies: Mindfulness, acceptance and relationship, in: S.C. Hayes, V.M. Follette, M. Linehan (Eds.), *Mindfulness and acceptance: Expanding the cognitive behavioral tradition*, Guilford, New York, 2004, pp. 1-29

[22] A. Wells, A cognitive model of GAD: Metacognition and worry, in: R.G. Heimberg, C.L. Turk, D.S. Mennin (Eds.), *Generalized anxiety disorders: Advances in research and practice*, Guilford, New York, 2004, pp. 164-186

[23] COVID-19 handling task force, Peta sebaran COVID- 19, 2021

[24] BPS, Statistik Komuter JABODETABEK. <https://www.bps.go.id/publication/2019/12/04/eab87d14d99459f4016bb057/statistik-komuter-jabodetabek-2019.html>, 2019

[25] J. Qiu, B. Shen, M. Zhao, Z. Wang, B. Xie, Y. Xu, A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations, *General*

Psychiatry, 33, 2020. DOI: 10.1136/gpsych-2020-100213

[26] D.J. Navarro, D.R. Foxcroft, Learning statistics with jamovi: a tutorial for psychology students and other beginners. 2019. DOI: 10.24384/hgc3-7p15