REVIEW ARTICLE

Oman Medical Journal [2023], Vol. 38, No. 1: e456

Validation of Malay Version of the COVID-19 Burnout Scale

Chin Siang Ang[1], Kai Wei Lee[2,3], Siok Ping Voon[4], Meng Chuan Ho[5], Chai Eng Tan[6], Siew Mooi Ching[7–10] and Pei Boon Ooi[9,11,12]*

[1]Centre for Population Health Sciences, Lee Kong Chian School of Medicine, Nanyang Technological University, Mandalay Rd, Singapore
[2]Department of Pre-Clinical Sciences, Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Kajang, Malaysia
[3]Centre for Research on Communicable Diseases, Universiti Tunku Abdul Rahman, Kajang, Malaysia
[4]Programme of Psychology, Faculty of Cognitive Sciences and Human Development, Universiti Malaysia Sarawak, Sarawak, Malaysia
[5]Department of General Studies, Faculty of Social Sciences and Liberal Arts, UCSI University, Kuala Lumpur, Malaysia
[6]Department of Family Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia
[7]Department of Family Medicine, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Selangor, Malaysia
[8]Malaysian Research Institute on Ageing, Universiti Putra Malaysia, Selangor, Malaysia
[9]Department of Medical Sciences, School of Medical and Life Sciences, Sunway University, Selangor, Malaysia
[10]Centre for Research, Bharath Institute of Higher Education and Research, Tamil Nadu, India
[11]Department of General Studies, School of Interdisciplinary Studies, Sunway University, Selangor, Malaysia
[12]Future Cities Research Institute, Sunway University, Selangor, Malaysia

ARTICLE INFO

Article history:
Received: 25 August 2021
Accepted: 8 February 2022

Online:
DOI 10.5001/omj.2023.20

Keywords:
COVID-19; Burnout; Reliability; Validation; Psychometrics; Malaysia.

ABSTRACT

Objectives: From early 2020, Malaysia had to implement nationwide lockdowns, quarantines, and other social distancing practices to contain the spread of COVID-19 virus, leading to symptoms of psychosocial burnout among the people. The aim of the present research is to develop and validate a Malay language version of the COVID-19 Burnout Scale (M-COVID-19-BS). ***Methods***: This three-phase study was conducted among Malaysian population. Phase 1 involved forward and backward translations of the Scale to Malay language by four professional bilingual translators. In Phase 2, the new M-COVID-19-BS instrument was piloted on 30 participants who suggested minor lexical modifications. Phase 3 consisted of online recruiting of Malaysian citizens to answer a composite questionnaire comprising the M-COVID-19-BS, Copenhagen Burnout Inventory (CBI), World Health Organization Quality of Life Scale Abbreviated Version (WHOQOL-BREF), and Fear of COVID-19 Scale (FCV-19S). Data were statistically analyzed. ***Results:*** The composite four-part questionnaire in Malay was answered by N = 225 Malaysian citizens. The M-COVID-19-BS instrument demonstrated a good internal consistency (Cronbach's alpha = 0.926) and had a unidimensional factor structure. M-COVID-19-BS scores positively correlated with the three CBI subscales, showing evidence of convergent validity. Negative correlation was reported between M-COVID-19-BS and WHOQOL-BREF, achieving discriminant validity. M-COVID-19-BS also exhibited moderate positive correlations with the FCV-19S, thus supporting its concurrent validity. ***Conclusions:*** Results demonstrate that M-COVID-19-BS is a valid and reliable instrument to assess burnout symptoms related to COVID-19 among Malay-speaking populations either collectively or as a self-care tool to detect burnout symptoms without needing to further burden the already overwhelmed Malaysian healthcare system.

In March 2020, World Health Organization (WHO) officially declared COVID-19 a global pandemic.[1] It spread rapidly around the world and became the most challenging public health crisis in recent memory.[2] Nations sought to control the spread of the virus by enforcing social distancing through lockdowns. In Malaysia, the first general lockdown, known as the Movement Control Order (MCO), was implemented on 18 March 2020.[3] The latest was on 1 July 2021. Initially, MCOs had shown promising results in flattening the COVID-19 spread rate. However, during the third wave of the pandemic in October 2020, the number of cases continued to grow despite MCO initiatives.

*Corresponding author: ✉peiboono@sunway.edu.my

At the time of writing (July 2021), Malaysia has seen > 951 000 confirmed COVID-19 cases with 7000 deaths.[4]

As in other countries, Malaysians have been battling the pandemic under extreme conditions. Amidst the changing political landscape in the country when the pandemic first started, the COVID-19 crisis metastasized from being a physical health challenge into one of widespread financial, economic, and psychological instability. Lives of people across income levels were disrupted, most severely among those in the bottom 40% and middle 40% economic strata. Many Malaysians remain concerned about their job security, increased responsibilities, longer working hours, and face difficulties in finding meaning in anything.[5]

Adjusting to the MCOs has been stressful for many individuals.[6,7] Overwhelming stress and prolonged isolation from social supports have impacted their mental health. This is illustrated by the recent spike in suicide cases in Malaysia. In the first five months of 2021, 468 suicide cases were reported compared to a total of 631 cases in 2020,[8] with an average of almost four daily incidents in the first quarter of 2021.[9]

While different contemporary studies have assessed the prevalence of depression, anxiety, and stress associated with the pandemic, less is known about the phenomenon of burnout.[10] Burnout can be understood as a state of chronic physical, emotional, and psychological exhaustion due to exposure to long-term stress in daily life.[11]

Individuals with burnout experience energy depletion or emotional exhaustion, negativity towards one's job, and reduced professional efficacy,[12] leaving them feeling stuck, drained, helpless, hopeless, and resentful.[11] There are many studies regarding burnout among medical practitioners.[10,13,14] It is also reported that the negative psychological impact on non-professional care providers may be higher than on professionals.[13]

In the course of the pandemic, the entire ecosystem within the society became impacted. Students were required to study from home.[15] Many adults were forced to work from home.[16] This has resulted in loss of efficiency requiring longer hours of study or work to achieve the same output, in addition to fostering feelings of uncertainty and anxiety towards the future. The situation is even worse for low-paid workers who do physical work, and whose workplaces are liable to be shut down during lockdowns. Long-term psychological stresses lead to burnout symptoms. With so many people living for many months in a state of helplessness and uncertainty, burnout levels in Malaysia may continue to rise.

Tackling this nationwide problem requires accurate assessment and a clear understanding of the burnout situation among Malaysians. While internationally validated burnout scales are available, concepts and idioms of psychological distress vary between cultures, and require modification and revalidation before being used on different populations. For this reason, we translated an international COVID-19 Burnout Scale (COVID-19-BS) to the Malay Language and validated it for Malay speakers. Together with another three instruments, the composite four-part questionnaire in Malay was circulated virtually for Malaysians to participate.

METHODS

There were three phases to the current study [Figure 1]. In Phase 1, the COVID-19-BS was translated into Malay, and its pre-final version was piloted in Phase 2. Phase 3 included a validation study, for which data was collected between 11 June and 10 July 2021, and the finalized composite four-part questionnaire was distributed online to potential participants.

Phase 1: Translation of the Scales

Permission to translate and adapt the scale was obtained from the original author. The M-COVID-19-BS went through the required forward and backward translation process.[17] The forward translation (English to Malay) was done by two independent bilingual professional certified translators to ensure conceptual and semantic equivalence between the items.

The research team reviewed the two Malay translations which were reconciled into a single Malay version. This was then back-translated into English by two bilingual independent professional certified translators who did not know the original scale in English. To ensure that the contextual meaning was preserved, the research team reviewed the back-translated versions against the original English version.

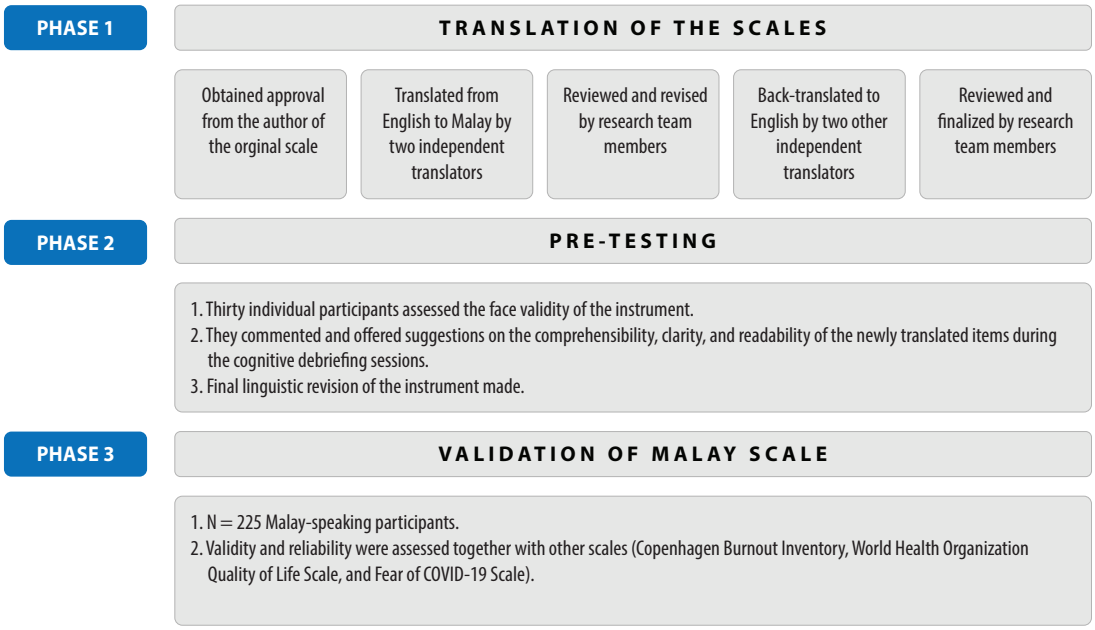


Figure 1: The process of translation and validation process of Malay COVID-19 Burnout Scale for the Malaysian population.

Phase 2: Pre-testing

The pre-final version of M-COVID-19-BS was piloted among 30 bilingual individuals to determine the face validity and the verbal comprehensibility of the instrument. During the cognitive debriefing session, the participants were asked to comment on the clarity and readability of each translated item individually. They were also asked to provide feedback on terms that seemed vague. For example, the word 'hopeless' had two Malay equivalents, *putus asa* and *putus harapan*. The consensus was in favor of *putus asa*. The participants also found the final

Table 1: Comparison of the original English COVID-19 Burnout Scale (COVID-19-BS) and Malay (M-COVID-19-BS) items.

Item No.	English original	Malay translation (final)
1	When you think about COVID-19 overall, how often do you feel tired?	*Secara am, berapa kerapkah anda berasa letih apabila anda memikirkan COVID-19?*
2	When you think about COVID-19 overall, how often do you feel disappointed with people?	*Secara am, berapa kerapkah anda berasa kecewa dengan orang ramai apabila anda memikirkan COVID-19?*
3	When you think about COVID-19 overall, how often do you feel hopeless?	*Secara am, berapa kerapkah anda berasa putus asa apabila anda memikirkan COVID-19?*
4	When you think about COVID-19 overall, how often do you feel trapped?	*Secara am, berapa kerapkah anda berasa terperangkap apabila anda memikirkan COVID-19?*
5	When you think about COVID-19 overall, how often do you feel helpless?	*Secara am, berapa kerapkah anda berasa tidak berdaya apabila anda memikirkan COVID-19?*
6	When you think about COVID-19 overall, how often do you feel depressed?	*Secara am, berapa kerapkah anda berasa murung apabila anda memikirkan COVID-19?*
7	When you think about COVID-19 overall, how often do you feel physically weak/sickly?	*Secara am, berapa kerapkah anda berasa lemah/sakit secara fizikal apabila anda memikirkan COVID-19?*
8	When you think about COVID-19 overall, how often do you feel worthless/like a failure?	*Secara am, berapa kerapkah anda berasa diri anda tidak bernilai/seperti seorang yang gagal apabila anda memikirkan COVID-19?*
9	When you think about COVID-19 overall, how often do you feel difficulties sleeping?	*Secara am, berapa kerapkah anda berasa sukar untuk tidur apabila anda memikirkan COVID-19?*
10	When you think about COVID-19 overall, how often do you feel 'I've had it'?	*Secara am, berapa kerapkah anda berasa «saya sudah tidak boleh tahan» apabila anda memikirkan COVID-19?*

version of the M-COVID-19-BS to be simple, short, and easy to understand. Table 1 lists the M-COVID-19-BS items in Malay and English from which it was translated.

Phase 3: Validation of the M-COVID-19-BS

Based on the recommended ratio of participants to items at 1:10,[18] we required more than 170 Malaysian participants to determine the validity and reliability of the newly translated scale on the Malaysian population. In the duration of a month, a total of 225 participants took part in this online survey and completed the four-part survey.

Convenience sampling was used to recruit the participants for this anonymous online survey. All participants were > 18 years, able to provide consent, and literate in the Malay language. Participants with psychological or neurological diagnoses were excluded from the study. A detailed description of the study's objectives was advertised on social media platforms and sent to potential participants via email. The advertisement included instructions and a link to a Google Form. To increase participation, the participants were encouraged to forward the questionnaire to colleagues and friends. In addition to the M-COVID-19-BS version, the participants completed additional validity scales online. The participants' sociodemographic data (e.g., age, ethnicity, and education level) were also collected. All participants provided informed consent before answering the online questionnaire. No compensation or reward was offered for participating. The study was approved by the ethics committee at the corresponding author's institution, Sunway University, Malaysia (Ref. SUREC 2021/031).

The COVID-19-BS[19] is a 10-item questionnaire with five levels of agreement, ranging from 1 (never) to 5 (always). The higher the COVID-19-BS score, the greater the implied burnout. The scale had reported good internal consistency in a past study ($\alpha = 0.920$).[19] Data from the present study indicates that the Malay version scale has good reliability ($\alpha = 0.926$), which is comparable to that reported in previous research.[19]

In parallel with validating the M-COVID-19-BS, additional three tools (listed below) were administered together among the 225 participants:

1. *Copenhagen Burnout Inventory*. The Copenhagen Burnout Inventory (CBI),[20] already validated for Malaysian populations,[21] measures severity of burnout in three subscales: 'personal burnout' (PB) which relates to the level of physical and psychological fatigue and exhaustion one experiences; 'work-related burnout' (WR) which measures physical and psychological fatigue and exhaustion in job; and 'client-related burnout' (CR) relating to the level of physical and psychological fatigue while collaborating with clients. The 19 items in the CBI Malay version are rated on a five-point scale scored from 1 (never/to a very low degree) to 5 (always/to a very high degree). The higher the score, the higher the implied burnout level. In Chin et al,[21] 2018 study, internal consistency coefficients of the Malay-CBI were reported to range from 0.830 to 0.870 while Cronbach's alpha (α) ranged 0.849–0.915. We used the CBI to evaluate the convergent validity of the M-COVID-19-BS. To be acceptable, the M-COVID-19-BS had to have a moderate-to-strong positive correlation with the CBI's three subscales.
2. *World Health Organization Quality of Life Scale, Abbreviated Version* (WHOQOL-BREF).[22] Validated for Malaysian populations,[21] this scale measures one's level of satisfaction with one's quality of life using four subscales: 'physical health,' that relates to a person's perception of their physical health (often construed as the absence of disease); 'psychological health', which relates to an individual's self-appraisal of their own life and the quality of their positive and negative emotions; 'social relationships', which relates to an individual's social relationships; and 'environment,' which relates to one's participation in their current environment. The 26 items in the WHOQOL-BREF Malay version are rated on a five-point scale ranging from 1 (very poor/never) to 5 (very good/always). Higher scores denote a better quality of life. The Malay WHOQOL-BREF reported good internal consistency with Cronbach's α values for the subscales ranging 0.64–0.80.[23] In the present study, Cronbach's α coefficient for physical health, psychological health, social relationships, and environment were 0.646, 0.666, 0.721, and 0.869, respectively. The WHOQOL-BREF was used to test the discriminant validity of the M-COVID-19-BS. The M-COVID-19-BS was anticipated to exhibit a negative correlation or no correlation with the four subscales of the WHOQOL-BREF.
3. *Fear of COVID-19 Scale* (FCV-19S).[24] This has been validated for Malaysian populations[25] and

Table 2: Mean scores for the Malay COVID-19 Burnout Scale items and their distribution parameters.

Scale	Mean	SD	Skewness	Skewness ratio	Kurtosis	Kurtosis ratio
Item 1	1.7	1.0	0.248	1.531	-0.200	-0.619
Item 2	2.3	1.0	-0.083	-0.512	0.344	1.065
Item 3	1.6	1.1	0.308	1.901	-0.487	-1.508
Item 4	1.8	1.0	0.179	1.105	-0.316	-0.978
Item 5	1.5	1.0	0.147	0.907	-0.833	-2.579
Item 6	1.5	1.1	0.554	3.420	0.043	0.133
Item 7	1.1	1.0	0.687	4.241	0.010	0.031
Item 8	1.2	1.0	0.529	3.265	-0.722	-2.235
Item 9	0.9	0.9	0.768	4.741	-0.271	-0.839
Item 10	1.5	1.1	0.407	2.512	-0.548	-1.697
Multivariate					42.620	20.633

Skewness ratio: skewness/standard error of skewness for each item; Kurtosis ratio: kurtosis/standardized error of kurtosis for each item. Skewness ratio and kurtosis ratio > 1.96 are suggestive of non-normality.

measures a person's fear towards COVID-19. The Malay FCV-19S consists of seven items, with scores ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate higher levels of fear towards COVID-19. The Malay FCV-19S has good internal consistency reliability with Cronbach α value of 0.893.[25] The scale appears to be internally consistent with an α of 0.911 in the present study. The FCV-19S was used to evaluate the concurrent validity of the M-COVID-19-BS. The M-COVID-19-BS was anticipated to exhibit a moderate positive correlation with the FCV-19S.

Data Analysis

Statistical analysis was undertaken using SPSS (IBM Corp. Released 2019. IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp.) and IBM AMOS 20.0. Before initiating the main analysis, we conducted preliminary checks for missing values and normality. There were no missing values. The normality of the data was confirmed by univariate and multivariate tests. With 2000 bootstrap samples, all mutually independent of one another, confirmatory factor analysis (CFA), and bootstrap maximum likelihood estimation were used to validate the factorial construct validity. In view of the sensitivity of the chi-square statistic to sample size, several goodness-of-fit indices were evaluated: the comparative fit index (CFI),[26] the Tucker-Lewis index (TLI)[27] standardized root mean residual (SRMR), and the root mean square error of approximation (RMSEA).[28] (For CFI and TLI, values ≥ 0.90 are acceptable,[28] whereas for SRMR ≤ 0.08[28] and for RMSEA ≤ 0.1[29] values are acceptable.) Pearson's correlation was used to test convergent validity, discriminant validity, and concurrent validity against previously validated scales. To determine internal consistency, we made use of corrected item-total correlation and reliability coefficients of 0.70 and above.[30]

RESULTS

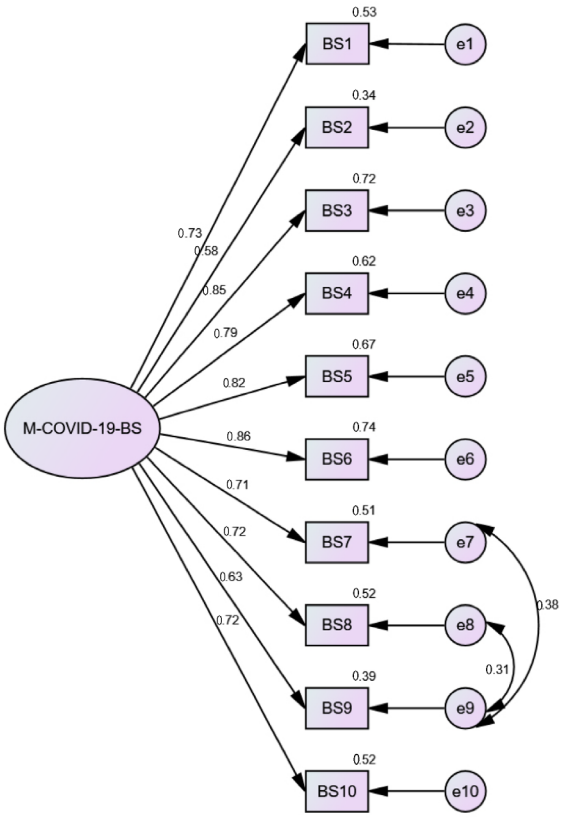
Demographic Profile

A total of N = 225 Malaysian nationals participated in this study, of whom 154 (68.4%) were women. The participants were aged from 18 to 70 years (mean = 26.18 ± 9.46 years). Three participants chose not to reveal their ages. Ethnically, 102 of 225 (45.3%)

Table 3: Summary of Model Fit Indices for Malay COVID-19 Burnout Scale (M-COVID-19-BS).

Model	$\chi 2$	df	CFI	TLI	SRMR	RMSEA (90% CI)
M-COVID-19-BS						
M2: one factor	202.285	35	0.887	0.854	0.065	0.146 (0.127–0.166)
M2a: modified, one factor	131.666	33	0.933	0.909	0.052	0.076 (0.055–0.097)

χ^2: Chi-square; df: degree of freedom; CFI: comparative fit index; TLI: Tucker-Lewis index; SRMR: standardized root mean square residual; RMSEA: root mean square error of approximation.



Note: Circle represents latent variable and square represents observed indicator. One-way arrow represents path and two-way arrow represents covariances. BS1: tired; BS2: disappointed; BS3: hopeless; BS4: trapped; BS5: helpless; BS6: depressed; BS7: physically sick; BS8: worthless; BS9: difficulty sleeping; BS10: I've had it; E: residuals.

Figure 2: Standardized factor loading for the Malay language version of the COVID-19 Burnout Scale (M-COVID-19-BS).

participants were Chinese, 95 (42.2%) were Malay, 18 (8.0%) were Indian, while 10 (4.4%) endorsed other ethnicities. The vast majority (89.4%) had tertiary education (diplomas, bachelor's degrees, or postgraduate degrees), while 10.6% had secondary education or less.

Item Properties and Inter-Item Correlations

Univariate normality was evaluated using the skewness and kurtosis measures. A few items were found to be outside the normal range. The distribution of items in M-COVID-19-BS showed a slight positive skewness. For multivariate normality to be considered acceptable, it must be < 5.[31] In this study, the multivariate kurtosis values exceeded 5, refuting the multivariate normality assumption. The results are presented in Table 2.

M-COVID-19-BS had inter-item correlation coefficients ranging from 0.241 to 0.790 at $p < 0.001$. Moderate to high correlations among the scale items indicated that the instrument was assessing only one construct (unidimensionality). We then inspected the factorial construct validity of the items to make inferences. Since normality is an essential assumption of structural equation modeling, we used bootstrapping for CFA.[31]

Factorial Construct Validity

The structure of the M-COVID-19-BS was tested using a one-factor model in which all items were loaded onto one factor. Aside from SRMR, all the fit indices were unsatisfactory [Table 3]. Two error terms for items 7 and 9 as well as 8 and 9 were then inserted into the model to produce another model 2a. Following this adjustment, Model 2a demonstrated a better fit index than Model 2. Figure 2 illustrates that all the items were statistically significant, suggesting the structural similarity of the M-COVID-19-BS with the English original [Figure 2].

Convergent, Discriminant, and Concurrent Validity

The correlations between these scales follow the expected pattern [Table 4]. Significant positive correlations were reported between the M-COVID-

Table 4: Convergent, discriminant, and concurrent validity of the Malay COVID-19 Burnout Scale (M-COVID-19-BS).

Scale	Convergent validity			Discriminant validity				Concurrent validity
	CBI			WHOQOL-BREF				FCV-19S
	PB	WR	CR	PhH	PsH	SR	Env	
M-COVID-19-BS	0.497‡	0.400‡	0.324‡	-0.197†	-0.197†	-0.228†	-0.284†	0.416‡

CBI: Copenhagen Burnout Inventory; PB: personal burnout; WR: work-related burnout; CR: client-related burnout; WHOQOL-BREF: World Health Organization quality of life scale, PhH: physical health; PsH: psychological health; SR: social relationship; Env: environment; FCV-19S: fear of COVID-19 scale; †p < 0.010; ‡p < 0.001.

Table 5: Internal consistency of M-COVID-19-BS.

Test Item*	Corrected item-total correlation	Squared multiple correlation
Item 1	0.691	0.536
Item 2	0.532	0.400
Item 3	0.794	0.706
Item 4	0.749	0.615
Item 5	0.784	0.659
Item 6	0.811	0.713
Item 7	0.726	0.653
Item 8	0.723	0.628
Item 9	0.637	0.574
Item 10	0.708	0.517

**See Table 1 for detailed description of each item; M-COVID-19-BS: Malay COVID-19 burnout scale.*

19-BS and the CBI three subscales (PB, WR, and CR). Evidence of convergent validity was thus provided.

A negative correlation was reported between M-COVID-19-BS and all four subscales of WHOQOL-BREF (PhH, PsH, SR, and Env), indicating that they had discriminant validity. In addition, M-COVID-19-BS exhibited moderate positive correlations with the FCV-19S. Concurrent validity was thus supported.

Internal Consistency

The M-COVID-19-BS showed high homogeneity, as indicated in Table 5. Corrected item-total correlation coefficients ranged from 0.532 to 0.811. Its alpha coefficient was 0.926. This means the scale was internally consistent.

DISCUSSION

The current study aimed to translate the COVID-19-BS developed by Yıldırım and Solmaz (2020)[19] to its Malay language version, M-COVID-19-BS, and to assess the latter's psychometric properties in a sample recruited from the general Malay-speaking population of Malaysia.

The results revealed statistical support for the reliability and validity of the M-COVID-19-BS across several levels. First, M-COVID-19-BS was found to be reliable with an internal consistency of 0.926 which is as excellent as the original COVID-19-BS (α = 0.920).[17] Second, CFA indicated M-COVID-19-BS to be a single dimension scale meeting the criteria of fit indices (cut-off points to support single factor solution: X^2/degree of freedom ≤ 5; TLI and CFI > 0.9; RMSEA < 0.1).[32] This finding is aligned with CFA reported in the original study[17] which showed the scale to be a single-factor solution to assess the burnout related to the COVID-19 pandemic.

Third, the ten items in M-COVID-19-BS showed a weak (< 0.4) to strong (> 0.6) factor loading ranging from 0.34 (item 2) to 0.74 (item 6). Specifically, the loading factor of two items were considered weak (items 2 and 9), four items moderate (items 1, 7, 8 and 10), four items strong (items 3, 4, 5 and 6). The loading factor of items 2 and 9 in M-COVID-19-BS did not achieve the conventional acceptable threshold (factor loading > 0.50). In comparison to COVID-19-BS, loading factors of items 2 and 9 in COVID-19-BS were strong and moderate (0.72 and 0.58, respectively) [Figure 2].

The M-COVID-19-BS had significant moderate correlations with the CBI and weak to moderate negative correlations (range: 0.324–0.497) with the WHOQOL-BREF. This reflects the capability of M-COVID-19-BS in measuring burnout. All domains of the WHOQOL-BREF were negatively correlated, demonstrating the possible reverse impact of the burnout on the quality of life. The M-COVID-19-BS had also a moderate correlation with the FCV-19S scores, even though fear and burnout are different psychological concepts. The observed correlation could be explained by the burnout furthering the fear of COVID-19 infection. This relationship needs to be further explored by qualitative research.

The suggested utility of the M-COVID-19-BS subscale derives from it having been tested in general adult Malaysian population with respondents from various ethnicities and a wide range of ages. However, all respondents had online access to participate in this study and the vast majority had secondary-level education. Therefore, the validity of this tool in respondents with lower levels of education remains uncertain.

The 10-item M-COVID-19-BS has conceptual and semantic equivalence to the original English version. Based on feedback from the pilot participants, it is also simple and easy to understand. The scale demonstrated good internal consistency and reliability. The confirmatory factor analysis affirmed the unifactorial structure of the scale. The scale was also found to have convergent, discriminant, and concurrent validities with various

established psychological measures for burnout, fear, and quality of life. With the increasing numbers of COVID-19 infections in Malaysia, M-COVID-19-BS is a relevant tool to rapidly assess the psychological impact of COVID-19 in this country.

Strengths and limitations

To the best of our knowledge, M-COVID-19-BS may be the first validated Malay language scale capable of assessing COVID-19-related burnout symptoms and levels. This scale could also be used in other countries and regions with significant numbers of Malay speakers, such as Brunei, Indonesia, and Singapore. The simplicity and ease of administration of M-COVID-19-BS render it possible to be used by the public themselves to measure their own or a small community's level of distress without depending on institutions or health care professionals. This would promote self-care among individuals and decrease the heavy burden on the health care system.

This study adopted a rigorous method in translating and validating M-COVID-19-BS to assess burnout symptoms and readying it as an early detection tool to assess the emotional burnout levels of individuals in the ongoing COVID-19 pandemic. However, it should not be perceived as an official clinical tool for clinical diagnosis of burnout or emotional disturbances. The relatively small sample size of 225 participants is a limitation of the study. The data collection options were limited because of the nationwide lockdown measures, leading to heavy dependence on participants online, the vast majority of whom also had tertiary education. This needs to be kept in mind while using this tool among less-educated Malaysians.

CONCLUSION

This study has established the validity and reliability of M-COVID-19-BS, the Malay language version of the COVID-19-BS, in assessing the psychological burnout experienced by the Malaysian population during the COVID-19 pandemic. M-COVID-19-BS has further advantages of being simple, direct, and easy to understand.

Disclosure

The authors declared no conflicts of interest. No funding was received for this study.

REFERENCES

1. Sohrabi C, Alsafi Z, O'Neill N, Khan M, Kerwan A, Al-Jabir A, et al. World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). Int J Surg 2020 Apr;76:71-76.
2. Balkhair A, Al Jufaili M, Al Wahaibi K, Al Riyami D, Al Azri F, Al Harthi S, et al. Virtual interdisciplinary COVID-19 team: a hospital pandemic preparedness approach. Oman Med J 2020 Oct;35(6):e190.
3. Shah AU, Safri SN, Thevadas R, Noordin NK, Rahman AA, Sekawi Z, et al. COVID-19 outbreak in Malaysia: Actions taken by the Malaysian government. Int J Infect Dis 2020 Aug;97:108-116.
4. Ritchie H, Mathieu E, Rodés-Guirao L, Appel C, Giattino C, Ortiz-Ospina E, et al. Coronavirus pandemic (COVID-19). [cited 20 January 2021]. Available from: https://ourworldindata.org/coronavirus.
5. Liu J. I'm putting my entire life on hold': how workers are grappling with COVID burnout. 2021[cited 20 January 2021]. Available from: https://www.cnbc.com/2021/05/05/im-putting-my-entire-life-on-hold-workers-face-covid-burnout.html.
6. Browning MH, Larson LR, Sharaievska I, Rigolon A, McAnirlin O, Mullenbach L, et al. Psychological impacts from COVID-19 among university students: Risk factors across seven states in the United States. PLoS One 2021 Jan;16(1):e0245327.
7. Rodríguez-Hidalgo AJ, Pantaleón Y, Dios I, Falla D. Fear of COVID-19, stress, and anxiety in university undergraduate students: a predictive model for depression. Front Psychol 2020 Nov;11:591797.
8. Krishnan DB. Bukit Aman: two suicide cases a day recorded since 2019. New Straits Times. 2021 [cited 20 January 2021]. Available from: https://www.nst.com.my/news/nation/2021/07/704077/bukit-aman-two-suicide-cases-day-recorded-2019.
9. Choong J. COVID-19: on average, almost four suicide cases reported to police every day in first quarter of 2021, says Dr Noor Hisham. The MalayMail; 2021.
10. Roslan NS, Yusoff MS, Razak AA, Morgan K. Burnout prevalence and its associated factors among Malaysian healthcare workers during COVID-19 pandemic: an embedded mixed-method study. Healthcare 2021 Jan;9(1):90.
11. Queen D, Harding K. Societal pandemic burnout: A COVID legacy. Int Wound J 2020 Aug;17(4):873-874.
12. Mäkikangas A, Kinnunen U. The person-oriented approach to burnout: A systematic review. Burnout Research 2016. Mar;3(1):11-23.
13. Norhayati MN, Che Yusof R, Azman MY. Vicarious traumatization in healthcare providers in response to COVID-19 pandemic in Kelantan, Malaysia. PLoS One 2021 Jun;16(6):e0252603.
14. Mohammad AH, Shamsudin SB, Kamarudin NA, Ching LM, Radzran AS, Deris MH, et al. Occupational burnout among public medical officers during the early stage of COVID-19 pandemic in Kota Kinabalu, Sabah. Malays J Public Health Med 2021;21(1):317-326.
15. Yusoff MS, Hadie SN, Mohamad I, Draman N, Muhd Al-Aarifin I, Wan Abdul Rahman WF, et al. Sustainable medical teaching and learning during the COVID-19 pandemic: surviving the new normal. Malays J Med Sci 2020 May;27(3):137-142.
16. Selvanathan M, Hussin NA, Azazi NA. Students learning experiences during COVID-19: work from home period in Malaysian Higher Learning Institutions. Teaching Public Adminstration 2020:0144739420977900.
17. Hambleton R, Patsula L. Adapting tests for use in multiple languages and cultures. Soc Indic Res 1998;45(1):153-171.
18. Terwee CB, Bot SD, de Boer MR, van der Windt DA, Knol DL, Dekker J, et al. Quality criteria were proposed for

measurement properties of health status questionnaires. J Clin Epidemiol 2007 Jan;60(1):34-42.

19. Yıldırım M, Solmaz F. COVID-19 burnout, COVID-19 stress and resilience: Initial psychometric properties of COVID-19 Burnout Scale. Death Stud 2022;46(3):524-532.
20. Kristensen TS, Borritz M, Villadsen E, Christensen KB. The Copenhagen burnout inventory: a new tool for the assessment of burnout. Work Stress 2005;19(3):192-207.
21. Andrew Chin RW, Chua YY, Chu MN, Mahadi NF, Wong MS, Yusoff MS, et al. Investigating validity evidence of the Malay translation of the Copenhagen Burnout Inventory. J Taibah Univ Med Sci 2017 Jul;13(1):1-9.
22. The WHOQOL Group. Development of the World Health Organization WHOQOL-BREF quality of life assessment. Psychol Med 1998 May;28(3):551-558.
23. Hasanah CI, Naing L, Rahman AR. World Health Organization quality of life assessment: brief version in Bahasa Malaysia. Med J Malaysia 2003 Mar;58(1):79-88.
24. Ahorsu DK, Lin C-Y, Imani V, Saffari M, Griffiths MD, Pakpour AH. The fear of COVID-19 scale: development and initial validation. Int J Ment Health Addict 2022;20(3):1537-1545.
25. Pang NT, Kamu A, Hambali NL, Mun HC, Kassim MA, Mohamed NH, et al. Malay version of the fear of COVID-19 scale: validity and reliability. Int J Ment Health Addict 2022;20(1):263-272.
26. Bentler PM. Comparative fit indexes in structural models. Psychol Bull 1990 Mar;107(2):238-246.
27. Tucker LR, Lewis C. A reliability coefficient for maximum likelihood factor analysis. Psychometrika 1973;38(1):1-10.
28. Hu LT, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. Struct Equ Modeling 1999;6(1):1-55.
29. Steiger JH. Structural model evaluation and modification: an interval estimation approach. Multivariate Behav Res 1990 Apr;25(2):173-180.
30. Brown TA. Confirmatory factor analysis for applied research. Guilford Publications; 2015.
31. Byrne BM. Structural equation modeling with AMOS: basic concepts, applications and programming. 3rd ed. New York: Routledge; 2016.
32. Carlson KD, Herdman AO. Understanding the impact of convergent validity on research results. Organ Res Methods 2012;15(1):17-32.