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Validation and adaptation of the Malay version of the Maslach Burnout Inventory

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Abstract. This study aimed to validate and improve the Malay version of the Maslach Burnout Inventory. This is a widely used measure of staff burnout, which has previously been translated into Malay. Methods: The Malay version of the Maslach Burnout Inventory- Human Services Survey was pilot tested, altered, backtranslated and pilot tested again. The questionnaire was tested with all clinical staff in a psychiatric hospital in 2015. After analysis, the questionnaire was altered and tested again in 2016. Results: Four items (items 5, 11, 18, 20) were altered from the original after pilot testing, since it was clear that respondents were misinterpreting them. The questionnaire was returned by 154 out of 301 staff in July 2015 and by 121 out of 309 staff in July 2016, with 58 staff returning questionnaires in both years. Analysis of the data from the first year showed a Cronbach Alpha of less than 0.7 for the Emotional Exhaustion and Depersonalisation scales. Four items were dropped from the emotional exhaustion scale, due to non-loading onto the scale on PCA and low item-total correlation. Two items from the depersonalisation scale were retranslated. In the second year, the Cronbach's Alpha was now good for the emotional exhaustion scale (0.84), acceptable for the depersonalization scales (0.70) and acceptable for the personal accomplishment scale (0.79). Burnout negatively correlated with the Work Related Basic Satisfaction of Needs Scale, but did not correlate with the scales designed to measure collaboration. Conclusion: The original version of the scale was not reliable for all three subscales. The modified version of the scale was reliable and had both discriminant and convergent validity.

1. Introduction

The concept of burnout was first described by Freudenberg in 1976, who recognised the syndrome in himself and others that worked in under-resourced public healthcare clinics in New York [1]. He described character changes in staff who were normally dedicated, where they became disengaged, irritable, cynical, uncaring, rigid and obstructive to change. Burnout can be described as a set of physical, cognitive and behavioural symptoms which occur as a result of prolonged stress. Burnout in healthcare staff is related to negative outcomes in patients and high rates of staff absenteeism, turnover and mental health problems [2]. Burnout has been shown to be more common in staff working in mental health fields than staff working in other specialties [2],[3].

This study was part of a larger action research study to improve collaboration across the Malaysian mental health system. This part of the study aimed to validate and improve the Malay version of the



Maslach Burnout Inventory – Human Services Survey [4], so that it could be used to measure the effectiveness of an intervention to improve collaboration. This is a widely used measure of staff burnout, which has 22 items and three subscales: emotional exhaustion (9 items), personal accomplishment (8 items) and depersonalization (5 items). This three factor structure has been widely replicated and has a better model fit than a one or two factor model in most studies [5]. However, many of the validation studies have shown that the scales need modification in order to achieve model fit, particularly in non-Western cultures [5]–[7]. It was previously translated into Malay and tested on ten bilingual Malay and English speakers in a pilot study. This showed a Cronbach's $\alpha > .8$ for all subscales and good agreement between Malay and English versions of the same rater [8]. It had been tested on a sample of healthcare workers, which showed acceptable reliability of with Cronbach's Alpha of 0.849, 0.773 and 0.732 for emotional exhaustion, depersonalization and personal achievement subscales [9]. Five items had not loaded onto the correct factor on principal component analysis (items 6, 13, 14, 16 and 20). The scale has not been tested in Sabah (which is culturally and linguistically different to Peninsular Malaysia) at the time of the study.

2. Methods

Pilot testing and translation: The Malay version of the Maslach Burnout Inventory questionnaire was pilot tested on five healthcare staff from a range of specialties, who were fluent in both English and Malay. The staff were interviewed after filling the questionnaire and asked about their interpretation of the questions. The items which were being misinterpreted were retranslated, back translated and pilot tested again. The process was repeated until the items were no longer misinterpreted.

Other instruments were given alongside the MBI, which were used to meet the wider objectives of the study and to assess convergent and divergent validity. These were:

- The Work related Basic Need Satisfaction scale (WRBNS) [10], an 18 item scale built on need satisfaction theory, which has three subscales: autonomy, competence, and relatedness. Need satisfaction has been shown to be negatively correlated with burnout, particularly the emotional exhaustion and depersonalisation components [11]–[13].
- Other instruments given to measure teamwork, communication and collaboration: communication openness, teamwork across units and teamwork within units scales of the Hospital Survey on Patient Safety Culture (HSPSC) [14], Collaboration and Satisfaction About Care Decisions scale (CSCD) [15] and the Leeds Attitude to Concordance (LAC) Scale [16],[17]). These scales were expected to have weaker correlations with the dimensions of the MBI than the WRBNS scale.

Sampling: All hospital staff were surveyed for two consecutive years in 2015 and 2016. The questionnaires were sent through the hospital mail system to all staff and were filled anonymously. Each staff was given a random ID number, which was at the top of each questionnaire, but was not known to the researcher analysing the data. This allowed staff to be compared between years.

Data analysis: SPSS version 21 was used to conduct the analysis. In 2015 reliability analysis (Cronbach's α) and principal component analysis were conducted. The results from promax rotation are reported, since the principal components were correlated. The results were used to alter the questionnaires. Some items that performed very poorly (item-total less than 0.4 or item loading on the correct factor less than 0.4 or cross loading) were dropped and some items were retranslated. After the data collection was repeated in 2016, analysis of Cronbach's α was repeated. Confirmatory factor analysis (CFA) was done on the 2016 data, using AMOS software vs 25. Fit was considered acceptable if fit scores met the following criteria: comparative fit index (CFI) > 0.9 , goodness of fit index (GFI) > 0.9 , root mean square error of approximation (RMSEA) < 0.8 [18].

The project had ethical approval from the Malaysian Ministry of Health Ethics Committee NMRR-13-30814792 and reciprocal ethical approval from the Curtin University Human Research Ethics Committee (HRE2018-0287).

3. Results

3.1. Pilot Testing

Four items were being badly misinterpreted or the respondents found them very difficult to understand (items 5, 11, 18 and 20). These items were changed after discussion with the scale developers (see Appendix).

3.2. Demographics

The MBI was completed by 142 out of 301 staff in July 2015 and by 121 out of 309 staff in July 2016 (see **Table 1**). There was no significant difference in any variables between years on X² test.

Table 1. demographics of participants (numbers of each staff group)

	Year		Total
	JUN 2015	JUN 2016	
Age			
Under 25	26	15	38
26-35	59	48	102
36-45	20	20	37
46-55	28	26	46
over 55	18	12	25
Sex			
Male	52	50	96
Female	87	68	144
Professional group			
Attendant	45	32	70
Doctor	2	3	8
Nurse	57	51	97
Medical assistant	29	24	49
Other	16	8	21
Medical or nursing post graduate training in psychiatry			
Yes	18	17	32
No	127	104	214
Years of experience in mental health			
<1	9	3	11
1-5	64	58	111
6-10	25	20	44
11-20	17	15	29
>20	32	24	49

3.3. First Data Collection 2015

In 2015 the Cronbach's alpha was poor for the emotional exhaustion (0.69), poor for the depersonalization scales (0.63) and good for the personal accomplishment scale (0.83).

On PCA three factors explained 48% of the variance. Two items were not loading (MBI 6 and 11) and four were loading onto the wrong factor (MBI 4, 13, 20, 14) (table 2). In addition, these six items had a low item-total correlation of less than 0.4.

Table 2. PCA of MBI in 2015 (factor loading on PCA)

Item	Subscale	PA	DP	EE
MBI7	PA	.783		
MBI4	EE	.768		
MBI9	PA	.750		
MBI19	PA	.713		
MBI17	PA	.686		
MBI21	PA	.621		
MBI18	PA	.538		
MBI12	PA	.461		
MBI10	DP		.868	
MBI15	DP		.755	
MBI5	DP		.717	
MBI20	EE		.707	
MBI13	EE		.644	
MBI22	DP		.524	
MBI16	EE			
MBI3	EE			.800
MBI1	EE			.744
MBI6	EE			.672
MBI8	EE			.669
MBI2	EE			.643
MBI14	EE			.408
MBI11	DP			

After discussion with the scale developers four items from the emotional exhaustion scale were removed (items 13, 14, 16 and 20). This scale already had nine items, so removing four of them would still leave five items. Item 13 'I feel frustrated by my job' had been difficult to translate, because the word for frustrate (*kecewa*) has other meanings, including 'fail' and 'disappointed'. It loaded onto the depersonalisation scale, rather than the emotional exhaustion scale. Item 14 'I feel I'm working too hard on my job' had loaded positively onto the Personal Accomplishment scale. Item 16 'Working with people directly puts too much stress on me' was dropped because it was not loading on any scale. Item 20 'I feel like I'm at the end of my rope' had been translated to mean 'I am approaching my goal' in the original translation- the opposite of the intended meaning. This was retranslated to mean 'I feel like I can't stand any more'. This loaded onto the depersonalisation factor rather than the emotional exhaustion scale.

The psychometrics of the five item version of the emotional exhaustion scale was the better than other versions of the scale with more items, in that the Cronbach's alpha was the highest and principal component analysis showed all of the items loading in the correct factor with no cross loading or non-loading items. For the two poorly fitting items on the depersonalization scale (items 11 'I worry that this job is hardening me emotionally' and 22 'I feel recipients blame me for some of their problems'), the items were not removed, since that scale only had five items. These items were retranslated.

3.4. Second Data Collection 2016

The Cronbach's Alpha in 2016 was improved and was now good for the emotional exhaustion scale (0.84), acceptable for the depersonalization scales (0.70) and acceptable for the personal accomplishment scale (0.79).

On CFA, the fit indices were lower than the acceptable cut-off scores: $X^2 = 353$, $DF = 132$, $RMSEA = 0.119$, $GFI = 0.72$, $CFI = 0.69$. Items were deleted sequentially, based on the standardised factor loading score and cross correlations, until the fit indices were acceptable. Model fit was achieved, but only after eliminating several items 6 and 8 from the emotional exhaustion scale, items 11 and 15 from the depersonalisation scale and item 4, 9, 12 and 21 from the personal accomplishment scale (see figure 1).

The five item and nine item versions of the MBI emotional exhaustion scale correlated well ($r(128) = .88$, $p < 0.001$) and the equation $y = 0.4 + 0.63X$ was derived and used to transform the EE mean to allow comparisons with international data.

Means for the three scales are shown in Table 3. There were no significant differences in the means between 2015 and 2016 using either unpaired t-tests with the whole sample or with paired t-tests, when only the 54 staff who had completed the questionnaire both years were included. There were no significant differences between the different staff groups.

The pattern of correlations with other scales is shown in table Table 4. The burnout subscales correlated most strongly with the Work Related Basic Satisfaction of Needs Scale, had weaker correlations with the teamwork scales and was not correlated with the collaboration and satisfaction about care decisions scale or the Leeds attitude to concordance scale.

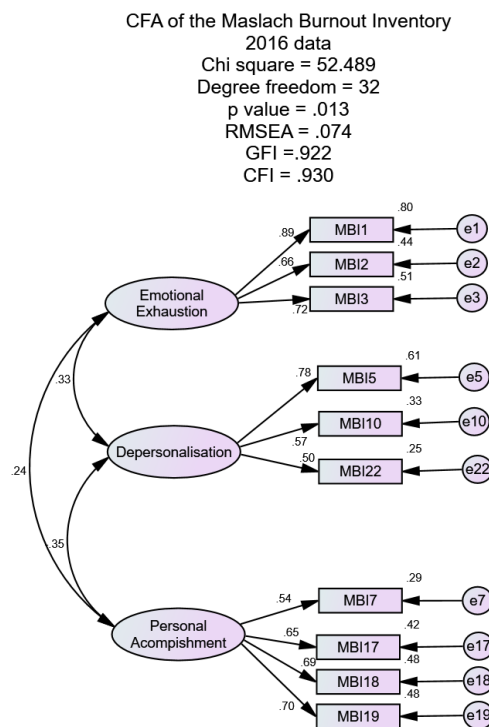


Figure 1. CFA of the 18 item version of the MBI after elimination of eight items.

Table 3. Means of the three subscales.

Year		EE (5 item version)	Transformed mean for EE*	DP	PA
JUN 2015	Mean	12.54	19.27	4.49	32.30
	N	128		128	128
	SD	6.47	9.63	5.23	10.53
JUN 2016	Mean	13.49	20.78	5.89	32.63
	N	122		122	121
	SD	6.77	10.11	6.02	9.29
Total	Mean	13.00	20.01	5.18	32.46
	N	250		250	249
	SD	6.62	9.87	5.66	9.93

*for comparison with international data

Table 4. Pattern of correlations of the three subscales of the MBI (2015 and 2016 data together).

	EE	DP	PA
MBI- Emotional exhaustion subscale	1	.237**	0.045
MBI- Depersonalisation subscale	.237**	1	-.324**
MBI- Personal accomplishment subscale	0.045	-.324**	1
Work related Basic Need Satisfaction scale	-.180**	-.424**	.237**
Collaboration and Satisfaction About Care Decisions scale (2015 only)	-0.085	-0.098	0.008
HSPS- teamwork within units subscale	-.282**	-.149*	0.101
HSPS- teamwork across units subscale	-.171**	-.144*	0.022
HSPS- communication openness subscale	-.173**	-0.091	-0.026
Leeds Attitude to Concordance scale	0.030	-0.068	0.039

**. Correlation is significant at the 0.01 level (2-tailed).

4. Discussion

The Malay version of the 22 item Maslach Burnout Inventory was not found to be adequately reliable or valid. Several of the items were difficult to translate and there were problems interpreting some of the items on pilot testing, with one item interpreted as having a meaning opposite to the original English version. This is likely to be due to the use of a culturally specific idiom. Four items were removed, producing an 18 item version that was tested in 2016 and found to have acceptable reliability, similar to that found in previous studies [5]–[7],[9]. The pattern of correlations was as expected for the three subscales.

The 18 item version did not have acceptable fit on CFA, which may have been partly due to a low sample size [19]. Fit was achieved after eliminating seven items. Non-fitting on confirmatory factor analysis has been found in many studies of the MBI and this has been overcome by either allowing cross correlation of error terms or by eliminating items [5]–[7].

Initial problems in the reliability indicate that some items were interpreted differently across language and cultures. Responding to an item involves several processes: interpreting the question, retrieving information from memory, forming a judgement and formatting the response [20]. Values are different between cultures and when respondents go through the judgement process for each item they incorporate these values. People from different cultures use different cognitive processes while interpreting the item. An example from our study is item 14 ‘I feel I’m working too hard on my job’, which loaded positively onto the personal accomplishment scale, rather than loading onto the emotional exhaustion scale. This may be because the respondents see working too hard as a personal accomplishment in this culture. It is notable that the same item loaded onto the personal accomplishment scale in the in the previous Malaysian study [9] and in the Korean validation study [7], which may be due to similar cultural values. All of the items which had loaded onto the wrong scale in the previous Malaysian validation study were also problematic in this study (items 6, 14, 13, 16 and 20) [9].

Limitations: The questionnaire was only tested on mental health staff, who may have different cultural values and cognitive processes to other kinds of staff and may not be generalisable. Sample size is likely to have affected the CFA and this needs to be repeated.

5. Conclusions

Considerable changes needed to be made to the translated Malay version of the MBI to correct for problematic translation relating both to culture and idiomatic language. After these changes were made, the MBI was deemed valid and reliable to be used in a hospital setting in Sabah, Malaysia. Idioms should be avoided in new scale development, particularly if they are to be used cross culturally.

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References

- [1] Freudenberger HJ Staff burn-out 1974 *J Soc Issues* **30** 159–65
- [2] Johnson J, Hall LH, Berzins K, Baker J, Melling K, Thompson C Mental healthcare staff well-being and burnout: A narrative review of trends, causes, implications, and recommendations for future interventions 2018 *Int J Ment Health Nurs* **27** 20–32
- [3] Sahraian A, Fazelzadeh A, Mehdizadeh AR, Toobaee SH Burnout in hospital nurses: A comparison of internal, surgery, psychiatry and burns wards 2008 *Int Nurs Rev* **55** 62–7
- [4] Maslach C, Jackson SE The measurement of experienced burnout 1981 *Apr J Organ Behav* **2** 99–113
- [5] Loera B, Converso D, Viotti S Evaluating the psychometric properties of the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) among Italian nurses : How many factors must a researcher consider? 2014 *PLoS ONE* **9** 1–18
- [6] Samaranayake DBDL, Seneviratne SRDA Validity of the Maslach Burnout Inventory – Human Services Survey among Sri Lankan Nursing Officers 2012 **57** 101–11
- [7] Oh SH, Lee M Examining the psychometric properties of the Maslach Burnout Inventory with a sample of child protective service workers in Korea 2009 *Child Youth Serv Rev Elsevier Ltd*; **31** 206–10
- [8] Chen W, Haniff J, Siau C, Seet W, Loh S-F, Hadzrul Abd Jamil M, Hadzrul M, Jamil A Pilot Study of the Malay Maslach Burnout Inventory and Malay Work-Related Quality of Life Scale in Malaysia 2013 *Stud Asian Soc Sci* **1** <https://doi.org/10.5430/sass.v1n1p20>

- [9] Chen WS, Haniff J, Siau CS, Seet W, Loh SF, Abd Jamil MH, Sa'at N, Baharum N Translation, Cross-cultural Adaptation and Validation of the Malay Version of the Maslach Burnout Inventory (MBI) in Malaysia 2014 *Int J Soc Sci Stud* 10.11114/ijsss.v2i2.309
- [10] Broeck A Van Den, Vansteenkiste M, Witte H De, Soenens B, Lens W Capturing autonomy, competence, and relatedness at work: Construction and initial validation of the Work-related Basic Need Satisfaction scale 2010 *J Occup Organ Psychol* **83** 981–1002
- [11] Li C, Wang CKJ, Pyun DY, Kee YH Burnout and its relations with basic psychological needs and motivation among athletes : A systematic review and meta-analysis 2013 *Psychol Sport Exerc* **14** 692–700
- [12] Gilson RJ Self-Determination Theory and Work Motivation 2005 *J Organ Behav* **26** 331–62
- [13] Trépanier SG, Fernet C, Austin S Workplace bullying and psychological health at work: The mediating role of satisfaction of needs for autonomy, competence and relatedness 2013 *Work Stress* **27** 123–40
- [14] Sorra JS, Dyer N Multilevel psychometric properties of the AHRQ hospital survey on patient safety culture 2010 *Health Serv Res* **10** <https://doi.org/10.1186/1472-6963-10-199>
- [15] Baggs JG Development of an instrument to measure collaboration and satisfaction about care decisions. 1994 Jul *J Adv Nurs* **20** 176–82
- [16] Raynor DK, Thistlethwaite JE, Hart K, P Knapp Are health professionals ready for the new philosophy of concordance in medicine taking? 2001 *Int J Pharm Pr* **9** 81–4
- [17] De las Cuevas C, Rivero A, Perestelo-Perez L, Gonzalez M, Perez J, Peñate W Psychiatric patients' attitudes towards concordance and shared decision making. 2011 *Patient Educ Couns* **85** e245-50
- [18] Suki NM 2016 *Structural Equation Modeling. A Step-by-Step Approach Using AMOS Software* (Perak: Darul Ridzuan Univerisiti Pendidikan Sultan Idris) p 57
- [19] Kamaruddin AA, Wah YB, Sayang MD, Jannoo Z Sample Size and Non-normality Effects on Goodness of Fit Measures in Structural Equation Model 2015 *Int Conf Stat Bus Eng* **25** 575-86
- [20] Roger Tourangeau, Lance J. Rips KR 2000 *The Psychology of Survey Response* (Cambridge: Cambridge Univerisity Press) p 7-16