

## Original Paper

# Validation of the Bahasa Malaysia version of the Coping Inventory for Stressful Situation

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## ABSTRACT

**Introduction:** There is an appealing need to have a validated Bahasa Malaysia (BM) questionnaire that is able to gauge stress coping styles among Malaysian population. A culturally accepted questionnaire will generate further research in the aspect of stress coping patterns in the Malaysia population. **Objective:** To translate the Coping Inventory for Stressful Situations (CISS) questionnaire into BM and to determine the construct validity, reliability and other psychometric properties of the translated BM version of the English CISS 48-item. **Method:** Two parallel forward and backward translations were done in BM in accordance to guideline and its validation was determined by using confirmatory factor analysis among 200 Malaysian subjects. **Results:** The BM CISS had very good Cronbach's alpha values, 0.91, 0.89 and 0.85 respectively for Task-, Emotional- and Avoidance-oriented. The overall Cronbach's alpha was 0.91. It also had good factor loading for most of its items where 44 items out of 48 had Confirmatory Factor Analysis values of more than 4.0. **Conclusions:** BM CISS had been adequately and correctly translated into Bahasa Malaysia with high psychometric properties. Minimal readjustment may be required in a few of its items to obtain excellent results.

**Key words:** Stress, coping styles, reliability, validity, Bahasa Malaysia.

## INTRODUCTION

Coping strategy refers to the acts or thoughts that people adopt to overcome the internal and external demands posed by a stressful encounter. The coping mechanisms are determined by the types of personality of individuals other or apart from environmental factors. The effectiveness depends on the approach the individual takes. Coping can be divided into two dimensions: problem-focused coping, which addresses the stressful situation, and emotion-focused coping, which deals with the feelings and reactions to the

stressful event [1]. Problem-focused coping refers to task orientation i.e. strategies used to solve a problem, reconceptualise it or minimize its effects. Emotion-focused coping strategies refer to person orientation which basically includes emotional responses, self-preoccupation and fantasizing reactions [2]. In uncontrollable situation, emotional-focus coping style is effective in reducing stress. Problem-focused coping has been found to decrease emotional distress and is negatively related to depression, whereas

emotion-focused coping increases emotional distress and is positively related to depression. In the long term, problem-focus or task-oriented coping style is most practical way reducing stress [3].

Recent tremendous increase in awareness and number of studies focused on the aspect of coping style related to personalities and other stressful situations triggered the initiative to translate and validate a questionnaire that can be used to Malaysian population. Various questionnaires are designed to measure coping styles such as Adolescent Coping Scale [4], Coping Responses Inventory [5], Coping Operations Preference Enquiry [6], Ways of Coping Questionnaire [7], Coping Skills Inventory [8] and Coping Inventory for Stressful Situations [9]. Apart from that we also have coping questionnaire related to certain condition; Depression Coping Questionnaire [10] and Pain Coping Questionnaire [11].

The CISS is a self-rated questionnaire and has multidimensionality in exploring coping styles [12]. The CISS 48-item has a great precision in predicting various types of coping mechanism. It has two versions; adult and adolescent. For both versions, they are able to classify coping styles into Task-oriented (16 items), Emotional-oriented (16 items) and Avoidance-oriented (16 items). For Avoidance, it can be further subdivided into 2 subscales; Distraction (8 items) and Social Diversion (5 items) [9]. In this study the authors will focus on the effort of translating the CISS 48-item into Bahasa Malaysia (BM) and eventually to validate this version.

### **Objectives:**

The main objective of this study is to produce an acceptable CISS Bahasa Malaysia version through a sound translation process. The second main objective is to determine the validity of this

version by looking at its confirmatory factor analysis among Malaysian population.

## **MATERIALS AND METHODS:**

### **Study Design**

This is a multi-center cross sectional study. This study had been reviewed and fully approved by the internal review board of University of Technology MARA. Special permissions from the original author of CISS (James D.A. Paker) and the authorized company (Multi-Health Systems Inc) were also acquired before commencement of this study. Informed consents of the participants were obtained after the nature of the procedure was fully explained.

### **Translation Process of CISS**

Based on US Census Bureau Guideline of translation, 2 forward and 2 back translations were done in parallel by medical and language experts. Two language experts would ensure the translated version would be grammatically and terminologically correct. The medical experts were to secure the meanings and contents of original CISS would be preserved.

The two forward and back translations then had been reconciled and sentence by sentence revision was done with the help of two language experts from the Academy of Language Studies University of Technology MARA (UiTM). Good translations were reflected by production of 2 English backtranslations which almost similar to original English version. At the end of this process we produced a harmonized version of BM CISS before we proceed for pre-test.

Harmonized BM version was tested to a small group of medical students before the authors embarked on real major validation study. Pre-test was done on 6 respondents with good background for both languages, English and Bahasa Malaysia.

The objective of pre-test was to identify any flaws in the harmonized version which might affect the comprehension of the subjects during the actual field study. At the end of pre-test, we produced finalized BM version of CISS which then was used for real validation process.

### **Validation Study**

The finalized BM version was tested for its reliability and validity among Malaysian population from different backgrounds. Reliability in this study was determined by its internal consistency by looking at Cronbach's alpha values and confirmatory factor analysis was used to ensure the validity of this BM-CISS by having acceptable factor loadings (>0.4).

### **Selection of Respondents**

Study population of this study was the Malaysian general population with age range between 19 to 60 years. The age range was in tandem with a recommendation in CISS manual book for Adult [9]. The subjects were selected from 3 government clinics in Klang Valley; Poliklinik Seksyen 7 Shah Alam, Poliklinik Tanglin and City Hall Clinic Kuala Lumpur. Permission was also obtained from relevant authorities. Patients who came to these clinics were from different backgrounds and ethnicity. After participants were briefed about this study they were given demographic and consent forms. Heterogeneous participants were taken care of in the aspects of age, gender, race and socio-economic class.

Simple random sampling was done by taking every third patient registered at the clinic counter. A total of 200 subjects with various age groups, ethnicity and socio-economic backgrounds were selected in this study. Composition of ethnic groups was tried to reflect the actual Malaysian population. Based on Malaysian Statistic Department, Malaysian population consists of Malays (54.1%), Chinese (25%), Indians (7.5%) and from other races (13.2%) [13].

### **Questionnaires**

- 1) Demographic questionnaire - Age, gender, ethnicity, level of education and types of occupation.
- 2) Finalized BM version of CISS. CISS is a self-rated questionnaire and it shall take at the most 15 minutes to complete.

### **Steps taken to ensure the accuracy of responses**

During the course of BM CISS questionnaire administration, the subjects were left without any interference especially from facilitators of the project. If subjects raise any queries about the terminology, they should be explained as minimal as possible to maintain the objective of this study and it should be recorded.

### **Inclusion and Exclusion Criteria**

- 1) Inclusion criteria:
  - a) The age of the subjects was between 19 to 60 years.
  - b) They must be proficient in Bahasa Malaysia.
- 2) Exclusion criteria:
  - a) Subjects with learning disabilities and cognitive impairments.
  - b) Subjects who were unable or refuse to give informed consent.
  - c) Subjects who were illiterate and not proficient in BM and failed a short BM fluency test.

### **BM Language Fluency Test.**

In this study a simple BM language fluency test was administered and integrated at the end of the questionnaire form in order to have a reliable assessment about their language competency. It involved building up a short sentence based on 3 words. This test required good grammar and wide knowledge of BM vocabulary and grammar in order to create a good sentence. The subjects were considered passed this test if they were able to construct a good BM sentence based on 3 words given.

## RESULTS

Demographic analysis of the subjects showed that there was fairly equal diversity in the aspects of age, gender, educational and occupational status. The mean age of these subjects was with gender composition of 51% males and 49% females. Although the CISS is not recommended be used among people with only primary education, in this sample of population there was 7% of them came from this group and majority of them (63.3%) obtained secondary school as their highest level of education. Chinese (11%) was obviously underrepresented in this study as compared to actual Malaysian population (25%) [13].

### Reliabilities of the CISS Bahasa Malaysia Version.

The reliabilities (internal consistencies) of BM CISS were determined by looking at Cronbach's alpha values. The overall Cronbach's alpha value for all items was very good .91 (CI 95%). Furthermore, the BM version had very good Cronbach's alpha values for all its 3 scales, .91, .89 and .85 respectively for Task-, Emotional- and Avoidance-oriented. Task-oriented had among the best value with mean score .67 and standard deviation .11.

### Validity Test

The construct validity was evaluated by using confirmatory factor analysis (CFA). Table-1 shows factor loadings for CFA of each BM CISS item by using Varimax rotation. This table proves that BM CISS managed to delineate its items into 3 main entities (task-oriented, emotional-oriented and avoidance-oriented). Factor loadings of 0.4 or more were considered good. Among all 3 scales in CISS, Task-oriented generally had the best value of CFA of all of its items. The lowest CFA value in this scale was item 1 "*schedule time*" (.41).

From all 48 items in CISS, four items had factor loadings less than .40. Among all items, item 28 ("*Wish that I could change what had happened or how I felt*") and 35 ("*Talk to someone whose advice I value*") had the poorest factor loading (.22 and .24 respectively). These items didn't cross culturally sensitive to gauge Emotional- and Avoidance-oriented but rather had high factor loading for Task-oriented; .51 and .60 respectively for item 28 and 35.

Correlations (Spearman's) between scales gathered from this study were between .20 to .35. Internal correlation between Distraction and Social Diversion subscales in Avoidance domain was .44.

**Table 1: Factor loadings based on confirmatory factor analysis for each item of BM CISS.**

CISS-48	Task	Emotional	Avoidance
1. Schedule time. <i>Mengurus masa lebih baik</i>	.41		
2. Focus the problem... <i>Memberi tumpuan kepada masalah...</i>	.53		
6. Do what I think is best.... <i>Membuat perkara yang saya fikirkan terbaik.</i>	.53		
10. Outline priorities. <i>Tentukan perkara diberi keutamaan.</i>	.62		
15. ...solved similar problems. <i>...menyelesaikan... masalah serupa.</i>	.57		
21. ...course of action. <i>Tentukan..penyelesaian dan laksanakan.</i>	.65		
24. ...to understand the situation. <i>Berusaha untuk memahami situasi tersebut.</i>	.67		
26. ...corrective action immediately ... <i>tindakan pembetulan segera</i>	.64		
27. Think.. and learn from my mistakes. <i>Fikir...dan belajar daripada kesilapan.</i>	.71		
36. Analyze the problem. <i>Meneliti masalah...</i>	.77		
39. Adjust my priorities. <i>Menyesuaikan ...keutamaan saya.</i>	.65		
41. Get control of the situation. ... <i>Cuba kawal keadaan.</i>	.69		
42. ...an extra effort to get things done. .... <i>usaha.. menyelesaikan masalah</i>	.79		
43. ...several different solutions... <i>Dapatkan .. penyelesaian masalah</i>	.81		
46. ....to prove can do it. <i>...membuktikan boleh mengatasi..</i>	.74		
47. Try to be organized..... <i>menjadi seorang yang sistematik.....</i>	.71		
5. Blame self putting things off.. <i>Menyalahkan diri sendiri....</i>		.62	
7. Preoccupied with aches and pains. <i>Melayan rasa sakit dan sengal</i>		.55	
8. Blame self ..into situation. <i>Menyalahkan diri terlibat dengan masalah</i>		.67	
13. Feel anxious... <i>Resah tidak mampu menangani masalah</i>		.76	
14. Become very tense. <i>Rasa sangat tertekan</i>		.78	
16. Tell .. not happening to me. <i>Berkata kepada diri sendiri..</i>		.43	
17. Blame for too emotional... <i>Menyalahkan diri..mengikut perasaan</i>		.72	
19. Become very upset. ... <i>sangat marah dan tertekan</i>		.77	
22. Blame myself.. not knowing to do. <i>Menyalahkan diri kerana tidak tahu...</i>		.77	
25. "Freeze" don't know to do. <i>Buntu dan tidak tahu apa yang perlu dibuat</i>		.57	
28. ...change what happened or feeling <i>mengubah keadaan atau perasaan..</i>	.51	.22**	
30. Worry about what I am going to do. <i>Risau tentang apa yang perlu dibuat</i>		.70	
33. ...it will never happen... <i>Berkata pada diri masalah tidak berulang</i>	.41	.33*	
34. Focus on general inadequacies. <i>Tumpu perhatian kepada kekurangan diri</i>		.52	
38. Get angry. <i>Menjadi marah.</i>		.61	
45. Take it out on other people. <i>Menyalahkan orang lain.</i>		.52	
3. Think about the good times... <i>Mengingati masa gembira....</i>	.52		.39*
4. Try to be with other people. ... <i>bersama orang lain.</i>			.33
9. Window shop. <i>Menengok-nengok barang di pusat membeli-belah.</i>			.67
11. ...go to sleep. <i>Cuba tidur.</i>			.43
12. Treat with favorite food or snack. <i>Makan makanan kegemaran.</i>			.71
18. Go for a snack or meal. <i>Keluar makan.</i>			.72
20. Buy something. <i>Beli sesuatu untuk diri sendiri.</i>			.79
23. Go to a party. <i>Pergi berparti atau ke majlis keramaian.</i>			.56
29. Visit a friend. <i>Menziarahi rakan.</i>			.36
31. Spend a special people. .. <i>bersama orang tersayang atau teman istimewa</i>			.41
32. Go for a walk. <i>Keluar berjalan-jalan.</i>			.67
35. Talk to someone. <i>Berbincang dengan seseorang...</i>	.60		.24**
37. Phone a friend. <i>Menelefon kawan.</i>			.52
40. See a movie. <i>Menonton wayang gambar (movie).</i>			.47
44. Take time off ... <i>Hindarkan diri sementara waktu..</i>			.55
48. Watch a TV. <i>Menonton television.</i>			.58
<b>Mean</b>	<b>.67</b>	<b>.60</b>	<b>.53</b>
<b>Std. Deviation</b>	<b>.11</b>	<b>.17</b>	<b>.16</b>
<b>Variance</b>	<b>.01</b>	<b>.03</b>	<b>.03</b>

\*Poor value

## DISCUSSION

Malaysia is a well known multi-racial country. Its population is composed of 3 major ethnic groups. According to Malaysian Statistic Department (2005) 54.1% were Malays, 25% were Chinese and 7.5% were Indians. Although much emphasis paid on the aspect of randomization in the selection of the subjects, this study had a limitation in its study population. Study population in this project didn't reflect the actual Malaysian population. Chinese was underrepresented as only 11% of this ethnic contributed to a total population as compared to 25% actual percentage [13]. The lack of Chinese percentage was replaced by Malays where Malay in this study was over presented (78%). Indians were roughly corresponded to actual percentage. Other aspect paid to ensure equal distribution of ethnic in the study population was the selection of participated clinics. The attendees of 3 selected clinics were good mixture of all ethnicities and represented the Malaysian population. There were a few explanations to this discrepancy. Randomization in the subjects selection managed to draw fairly good sample population according to ethnicity, however non-cooperation and refused to give consent had hindered the effort. We found there was quite substantial number of Chinese selected during randomization refused to give cooperation to participate in this study. There were about 20 Chinese subjects or if we translate into percentage, it was about 10% refused to give their consents. The number of Chinese who turned down their participations was replaced with other races during randomization. The similar finding was also found in other studies in the past [14].

Internal consistency of new BM version of the CISS found in this study was quite comparable to the original English version. Original author recorded that internal consistencies for Task scale was between .87 to .92., Emotional scale .82 to

.90 and Avoidance .85 to .76 [9]. These figures are quite similar to figures obtained in this study (.91, .89 and .85 respectively for Task-, Emotional- and Avoidance-oriented). We could also see a downward pattern of Cronbach's alpha from Task-, Emotional- and Avoidance-oriented. The overall Cronbach's alpha of all items in this study was .91.

Generally most of items in the BM version of CISS 48-item were having good confirmatory factor analysis values except 2 items (28, 35) which may need to reexamine. The CFA of these items were not very bad but can be further improved either by altering the structure of the sentence or replacement. These items were not culturally bound to any specific ethnic groups. Possible explanation as to why it had poor CFA is Emotional- and Avoidance-oriented are mainly incline towards maladaptive coping style, whereas Task-oriented is adaptive [15]. Further analyzing of the items; item 28 "Wish that I could change what had happened or how I felt" or "*Berharap agar saya dapat mengubah keadaan atau perasaan saya*" and item 35 "Talk to someone whose advice I value" "*Berbincang dengan seseorang yang pandangannya saya hargai*" although these items were measuring emotional and avoidance but they are adaptive in nature. Comparing with the English version, there are a few similarities found in this study. First, in general Task-oriented had better CFA values as compared to other scales. Secondly among all items in Task-oriented, item 1 was the poorest item in this scale. Thirdly, item 35 was not stable both in the English version (from the manual) as well as the BM version in this study. It generated the lowest value when administered among undergraduate and general adults, and it shifted to task-oriented among psychiatric patients. Finally looking of pattern analysis of CFA by using Varimax rotation, the result of this study was more incline towards 3-factor solution as found in a few studies [9, 16, 17].

Authors identified a few items in Avoidance scale such as “Go for a party” or “See a movie” were expected to have low because it rather culturally bound. Not many Malaysian would go for a party or theater to watch movie in their daily activity as part of stress compensation mechanisms. This item “go for party” had been extended and broadened the scope in its translation where the authors added to “religious gathering” (*majlis keramaian*) which was culturally significant. Due to this reason, both items yielded good CFA values.

Correlations (intercorelation) between scales gathered from this study were between .20 to .35 as displayed in figure 1. These figures correspond with figures recorded in the CISS manual book .0 to 0.4. The low correlation between 3 scales implies that the 3 scales stand as different entities. There was moderate correlation between 2 subscales in Avoidance. The correlation between Distraction and Social Diversion subscales was .44 which indicates that there is a moderate correlation.

The present study provides a preliminary milestone for further establishment of this BM version. Future study need to look at the correlation and comparison with other coping questionnaires such as Coping Operations Preference Enquiry (COPE) which has been translated and used by various institutions [18,19]. The authors concluded that this version is adaptable to the Malaysian population but further studies are needed and a few may need replacement of 2 poorest CFA which are item 28 and item 35.

#### ACKNOWLEDGEMENT

We would like to express our gratitude and thanks to all subjects who had participated in this study for their kind consents.

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