



## SINHALA VERSION OF THE FIVE FACET MINDFULNESS QUESTIONNAIRE (FFMQ-39-SIN): CONTENT VALIDATION THROUGH EXPERT JUDGEMENT AND INTERNAL CONSISTENCY

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### INTRODUCTION

Mindfulness, which is understood as the ability to bring one's attention to experiences in the present moment in a non-judgmental way (Kabat-Zinn, 1994), is a promising concept that is widely incorporated in to psychotherapeutic interventions at present. These include various forms of Cognitive Behaviour Therapy (CBT) including, mindfulness-based stress reduction (MBSR; Kabat- Zinn, 2004), mindfulness-based cognitive therapy (MBCT; Segal, Williams, & Teasdale, 2002), dialectical behavior therapy (DBT; Linehan, 1993) and acceptance and commitment therapy (ACT; Hayes, Strosahal, & Wilson, 2004) which are empirically supported as effective in addressing characteristics of depression and anxiety in those who are suffering with chronic illness conditions (Bohlmeijer, Prenger, Taal and Cuijpers, 2010) and chronic pain (Veehof, van Oskan, Schreurs, & Bohlmeijer, 2011) (MBCT) and in treating generalized anxiety disorders (Roemer, Orsillo, & Salters-Pedneault, 2008), sub-clinical depression (Bohlmeijer, Fledderus, Rokx, & Pieterse, 2011) (ACT) and recurrent depression (Teasdale et al, 2002; Ma & Teasdale, 2004).

This beneficial nature of mindfulness indicates the need for accurately understanding the underlying mechanisms of mindfulness in bringing about such changes. Gaining this understanding requires the utilization of sound methods for assessing the construct (Brown and Ryan, 2004; Bishop et al., 2004; Baer, Smith and Allen, 2004) as it may facilitate examining whether individuals who practice it become more mindful over time and whether these changes mediate the effects of mindfulness training on psychological health (Baer et al., 2008). Furthermore it is noteworthy that psychometrically sound measures of mindfulness can be used to evaluate therapy outcomes of MBIs. There are a number of promising psychometric tools developed to measure mindfulness. These include, the Freiburg Mindfulness Inventory (FMI; Buchheld, Grossman, & Walach, 2001), the Mindful Attention Awareness Scale (MAAS; Brown and Ryan, 2003), the Kentucky Inventory of Mindfulness Skills (KIMS; Baer et al., 2004), the Cognitive and Affective Mindfulness Scale (CAMS; Feldman, Hayes, Kumar, Greeson, and Laurenceau, 2007) and the Mindfulness Questionnaire (MQ; Chadwick, Hember, Mead, Lilley and Dagnan, 2005) and assesses the individuals' tendency to be mindful in their daily life in the form of self-reported questionnaires.

However, among the commonly accepted psychometric measures of mindfulness, the 39-item Five Facet Mindfulness Questionnaire (FFMQ-39) (Baer et al. 2006) is understood to be one of the most widely used and comprehensive measures of one's perceived levels of mindfulness in daily life (Baer, 2016). The FFMQ-39 is an empirically supported valid and a reliable tool to quantify mindfulness and was modified by combining five main mindfulness measures including the MAAS, FMI, KIMS, CAMS-Revised and the MQ where findings indicated a five-factor solution to be the best fit (Baer et al., 2006). The five facets of the FFMQ-39 are: *Observing* (noticing or attending to internal (perceptions, thoughts, feelings) and external stimuli (sounds, visual imagery)), *Describing* (labelling one's feelings, thoughts, emotions and experiences *Non-judging of*



*Inner Experience* (taking a non-evaluative stance towards internal stimuli that one might experience), and *Non-reactivity to Inner Experience* (allowing emotions and thoughts to come and go, without being interfered by them). As empirically suggested overall mindfulness as well as these separate factors play a role in addressing psychopathology.

Sri Lanka too has seen a rapid increase in the use of MBIs in clinical settings and measuring the outcomes of them can be of immense use to clinicians as well as researchers in the country. However, currently there are no psychometric scales adapted or validated to the Sri Lankan concept which quantifies mindfulness in a meaningful manner. Therefore the current study aimed at: 1) establishing the face, consensual and content validity of the proposed questionnaire by translating it and adapting it to the Sri Lankan context and 2) exploring its psychometric properties in terms of internal consistency reliability.

## METHODS

### 1.1. Study design and participants

The current study is a validation study conducted to ensure the face, content and consensual validity and the internal consistency reliability of the Sinhala version of the Five Facet Mindfulness Questionnaire-39 (FFMQ-39-SIN). Data were collected from participants (N=50) selected for a larger study titled, "*Meditation, Mindfulness and Health*" through purposive and convenient sampling and were between the ages of 18-65 years and had completed secondary level of education. Those who had been/were still under psychiatric or psychological treatment for the past five years, those who experienced learning disabilities and those who with brain damage were excluded. The study was conducted at the Faculty of Medicine of the University of Colombo.

### 1.2. Measures

Upon providing informed consent, the participants completed a demographic information questionnaire which explored participant information including their age, gender and highest education qualifications. The participants then completed the FFMQ-39-SIN which was translated, subjected to a Delphi process and pre-tested. The original FFMQ-39 (Baer et al, 2006) is a multifactorial scale with a five-factor structure as confirmed through exploratory and confirmatory factor analyses. The FFMQ-39 has also shown adequate to good internal consistency reliability with Cronbach's alpha coefficients ranging from 0.75 to 0.91 and construct validity where the five facets of mindfulness demonstrated positive and negative correlations with related constructs thus further ensuring incremental validity of the scale (Baer et al., 2006).

### 2.3. Procedure

#### *Step 01 - Translation of the original FFMQ-39 to the Sinhala language*

As an initial step, the FFMQ-39 was subjected to forward and backward translation, the widely used method of translation during cross-cultural validation processes (Epstein, Santo & Guillemin, 2015), by an independent group of bilingual translators. First, two forward translations (FWD\_1 & FWD\_2) from English to Sinhala were obtained from two bilingual translators. I.e. from one who was familiar with the concept of mindfulness (FWD\_1) and another who was familiar with the common Sinhala dialect (FWD\_2). Afterwards the FWD\_1 and FWD\_2 were synthesized into one translation (FWT) by a third independent bilingual translator with a background knowledge of mindfulness and the language used by locals. The FWT was then back/blind-translated to English (BT) by a fourth bilingual translator and was compared with the original scale by an expert group consisting of the researchers and the four aforementioned translators to resolve any ambiguities.

#### *Step 02 - Establishing content and consensual validity through the Delphi process*



### **and pre- testing the scale**

The resulting Sinhala translation (FFMQ-SIN-a) was then subjected to a Delphi process (Jones and Hunter, 1995) which is widely used to ensure content and consensual validity in health-related research by obtaining qualitative and quantitative feedback from experts. The Delphi panel consisted of 7 professionals in the fields of mindfulness and/or clinical psychology and they rated each item on a 9-point Likert scale ranging from 1 (total agreement) to 9 (total disagreement) based on conceptual and linguistic clarity and cultural acceptability. FFMQ-SIN-b was developed based on the group's feedback. It was then administered among a sample of 10 individuals who represented the target population in order to ensure the linguistic and cultural coherence of the items. The time spent on completing the questionnaire was recorded by the researcher and the final FFMQ-39-SIN was developed based on the feedback obtained through the processes mentioned in this section.

### **Step 03 - Exploring internal-consistency reliability**

Internal consistency reliability was evaluated by calculating Cronbach's alpha coefficients of the entire FFMQ-39-SIN and each of its subscales. Internal consistency reliability refers to the "extent to which a group of items measure the same construct, as evidenced by how well they inter- correlate" (BrckaLorenz, Chiang, & Laird, 2013, P.01) and Cronbach's alpha is the widely used objective measure for exploring reliability (Tavakol & Dennick, 2011).

Feedback obtained through the translations, Delphi process and pre-testing were qualitatively analyzed. Quantitative data were analyzed using the IBM Statistical Package for Social Sciences (SPSS-23).

## **RESULTS AND DISCUSSION**

### **1.3. Translation, Delphi process and the pre-testing of the scale**

The translation, Delphi and pre-testing processes highlighted phrases and words that needed alterations in order to enhance the conceptual and linguistic clarity of the items. The synthesis of FWD\_1 and FWT\_2 during the translation process ensured certain phrases/words being simplified in order to improve linguistic clarity for those familiar with the colloquial Sinhala dialect. For instance, in item 29 in subscale *non-reactivity to inner experiences*, the Sinhala term which represented mental images (*chittha ruupa*) was simplified into a phrase which meant images that are drawn in one's mind (*sithehi athi wana ruupa*). In terms of the Delphi process all items (100%) received acceptable ratings (ratings above 4) (de Zoysa, Rajapakse & Newcombe, 2010) during the first round and experts provided further feedback to enhance the conceptual, linguistic and cultural coherence of them. For instance, the Sinhala phrase initially used to represent the term 'I notice' in item 11 of the *observing* subscale, was changed from *mata dhaniimak atha* ('I have an understanding), to *mage awadhaanaya pawathii* ('it captures my attention/I notice) as it was viewed to better represent colloquial terminology. The Delphi process moreover highlighted the importance of retaining certain terms that were altered during the translation process. For instance, the Sinhala term *sanwedana* which was used during the initial translation processes to represent 'sensation's was subsequently altered to *daneem* (translates into feelings) during the synthesis process as it was identified to not frequently used in the spoken form of the language. However, the Delphi experts emphasized on retaining the previous Sinhala term (*sanwedana*) in order to retain conceptual clarity and enhance linguistic clarity. This phrase is used in items, 06, 11, 15 and 22 to represent the English term 'sensations'. During the pre-test process, participants commented on certain terms in three items which resulted in further minor changes.

All items receiving acceptable ratings during first Delphi round and the low number of



alterations required thereafter during the Delphi process and the pre-testing indicated that the cultural adaptation of the FFMQ-39-SIN required little conceptual and linguistic adaptation. These suggests of less complexity in comprehending questionnaire items which may facilitate higher response rates. The average time period for the completion of the questionnaire was between 8-19 minutes. According to Cape and Phillips (2015) the average attention span of an adult is 20 minutes and therefore the above time period can be identified as not interfering the attention process that requires in completing the scale.

#### **1.4. Internal consistency reliability**

In terms of sample characteristics, the study sample consisted of 50 participants ranging from 27 – 62 ( $M=42.22$ ,  $SD=9.76$ ) years of age and 54% of the group were males ( $n=27$ ). Internal consistency reliability of the overall FFMQ-39-SIN and its each subscale was assessed. Cronbach's alpha correlation coefficients for the overall FFMQ-39-SIN was reported as .94 and Cronbach's alpha coefficients for all facets were adequate to good (range 0.77 to 0.92): *observing* =.81, *describing*

=.77, *acting with awareness* = .92, *non-judging of inner experiences* = .83, and *non-reactivity to inner experiences* =.82. (These values along with the alpha coefficients reported during the development of the original FFMQ-39 are indicated in Table 1). In terms of inter-item correlation analysis, items inter-correlated with one another and the deletion of any item was not able to result in an improvement in the reliability coefficient in any facet or the overall questionnaire.

Alpha levels above .70 are deemed satisfactory, adequate and acceptable (Bonett & Wright, 2014) and the current findings indicate all subscales of the FFMQ-39-SIN to show alpha levels above

0.70. These findings show similarities to the original FFMQ-39 (see Table 1). They are also in line with the Swedish validation study of the FFMQ-39 (Lilja et al, 2011) and findings related to internal consistency of the overall scale are in line with the Hindi version of the FFMQ-39 (Mandal, Arya, & Pandey, 2016). Items of the FFMQ-39-SIN being inter-correlated with one another as indicated by the study findings too are similar to that reported by Baer and colleagues during the development of the original FFMQ-39 and supports the notion that the scale items measure related but distinct constructs (Baer et al, 2006, 2008). The above findings suggest that the FFMQ-39-SIN and its subscales show good internal consistency reliability.

The use of a sound methodology including standardized and widely accepted cross-cultural validation methods is identified as a prominent strength of this study. It is further understood that using defined study samples, such as meditators and non-meditators, would provide more robust details on the psychometric properties of the scale. As an extension of this study, we hope to further explore the psychometric properties of the FFMQ-SIN-39 by evaluating its construct validity in terms of factor analysis, convergent and discriminant validity as well as its incremental validity in the Sri Lankan context and we hope to validate these findings in a larger study sample.

#### **CONCLUSION**

The current study aimed at establishing the face, consensual and content validity of the Sinhala version of the Five Facet Mindfulness Questionnaire and at exploring the psychometric properties of the new scale of internal consistency reliability and the objectives were achieved using a sound methodology. We believe that investigating the facets of mindfulness through quantifying them may improve the academic, clinical and empirical knowledge, thus facilitating the effective use of this concept in all aspects, including enhancing psychological adjustment. We conclude that the FFMQ-39-SIN to be an instrument with face, consensual and content validity and high internal consistency reliability.



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**Additional data**

Table 1. Cronbach’s alpha coefficients in each study

	Baer et al. (2006) FFMQ-39	Present study FFMQ-39-SIN
Overall mindfulness	0.87	0.91
Observing	0.83	0.81
Describing	0.91	0.77
Acting with Awareness	0.87	0.92
Non-judging of Inner Experiences	0.87	0.83
Non-reactivity to Inner Experiences	0.75	0.82