



# Validity of the Five Facet Mindfulness Questionnaire in an Australian, meditating, demographically diverse sample



Natalie Zoe Taylor \*, Prudence Marjorie Robina Milllear

School of Social Sciences, (ML32), Faculty of Arts and Business, University of the Sunshine Coast, Sippy Downs, 4556, Queensland, Australia

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## ABSTRACT

Mindfulness is a five-facet construct. It consists of observing the present in a non-judgmental and non-reactive manner, describing that environment, and then acting accordingly. When using the Five Facet Mindfulness Questionnaire (FFMQ), high levels of mindfulness have been found to predict positive psychological health. However, the factor structure of FFMQ has not been tested in Australia, and results have been limited to particular demographics and confounded by incentives. Furthermore, the FFMQ has been found to be more valid in samples that meditate (session/s of immobile present focus), but it is not clear how committed to meditation the sample needs to be. The first aim of this study was to test the factor structure of the FFMQ in an Australian sample. The second aim of this study was to test how often participants have to meditate to lead to a significant change in mindfulness. Results found that the five facets in the FFMQ constituted as a sub-scale in an Australian sample. Results also found that everyday meditation significantly increased the five facets of mindfulness when compared to meditators with limited commitment, but only the 'Observe' facet of mindfulness significantly increased when compared to meditators with partial commitment. Applications are discussed.

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## 1. Introduction

Mindfulness is an awareness of and attention to present events and experiences (Brown & Ryan, 2003). In Baer, Smith, Hopkins, Krietemeyer, and Toney (2006) conducted an analysis ( $N = 613$  students) of different items from different instruments designed to measure mindfulness. The results concluded that mindfulness has five separate facets. The first facet is 'Observe', which constitutes of noticing or attending to the internal (e.g. thoughts and emotions) or external environment (e.g. sensations). The second facet is 'describe', which is the ability to label the internal environment externally with words. The third is 'acting with awareness', which is attending solely to the present moment. The fourth is 'not judging the inner experience', which is the ability to not evaluate the internal environment. Fifthly, and lastly, 'not reacting to the inner experience' is the ability to attend to the internal environment without rumination or fixation (Baer et al., 2006). Further studies have shown that mindfulness is trait-like, that people vary in their ability to be mindful, and mindfulness based-interventions can reduce stress, anxiety and ruminative thinking (Chiesa & Serretti, 2009). However, there is still a genuine need to ensure that the instruments used to measure mindfulness are psychometrically sound in the populations they are administered in (Baer et al., 2006).

The five different mindfulness questionnaires included in the analysis of Baer et al. (2006) all showed promising psychometric characteristics. These measures were the Freiburg Mindfulness Inventory (FMI; Walach, Buchheld, Buttenmuller, Kleinknecht, & Schmidt, 2006), the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), the Cognitive and Affective Mindfulness Scale (CAM; Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007), the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004), and the Mindfulness Questionnaire (MQ; Chadwick, Hember, Symes, Peters, Kuipers, & Dagnan, 2008). However, Smith, McCarthy, and Zapolski (2009) argue that the most valid measurement tool has to have a sub-scale for each facet of a construct. The FMI, MAAS, MQ and CAMS all conceptualize mindfulness as a single factor, and the KIMS conceptualizes mindfulness with four subscales. In contrast, the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006) has been designed to have five separate sub-scales for each of the five facets of mindfulness. Different versions of the FFMQ have been validated in a number of different countries, including France (Heeren, Douilliez, Peschard, Debrauwere, & Philippot, 2011), Sweden (Lilja et al., 2011) and China (Deng, Liu, Rodriguez, & Xia, 2011). However, to date, the factor structure of the FFMQ has not yet been tested in an Australian sample, which is the first step towards validation of the measure in a population in the southern hemisphere.

In addition to cultural limitations, mindfulness research has been restricted to particular demographics in the samples used. For example, many of the studies validating the FFMQ have consisted primarily of one or more of the following: student samples (Baer et al., 2006),

\* Corresponding author.

E-mail addresses: [nataylor1991@live.com.au](mailto:nataylor1991@live.com.au) (N.Z. Taylor), [pmilllear@usc.edu.au](mailto:pmilllear@usc.edu.au) (P.M.R. Milllear).

samples with small numbers of participants (Cohen-Katx, Wiley, Capuano, Baker, & Shapiro, 2005), clinical samples (Watkins & Teasdale, 2004), older samples (Baer et al., 2008) or samples that have been offered an incentive (an item/monetary reward in exchange for completion of the research) (Van Dam, Earleywine, & Danoff-Burg, 2009). Expanding the FFMQ beyond university students to the general population will better reflect mindfulness in the majority (O'Neil & Penrod, 2001). In addition, if the sample is offered an incentive, then the item/monetary reward could replace intrinsic motivation (O'Neil & Penrod, 2001). More diverse samples that complete a study for free are more likely to produce valid results.

The final consideration to testing the factor structure of the FFMQ more broadly is to take into account other variables that may influence how in tune the person is with their surroundings, such as the person's disposition or through their meditation practices. The current study will focus on meditation as a possible confounding variable for levels of mindfulness, as previous studies have shown that the FFMQ is more valid in samples that meditate (Baer et al., 2008; Cash & Whittingham, 2010). Meditation is an immobile state where concentration is centered on thoughts and feelings (Baer et al., 2008). In a sample of non-meditators and experienced meditators, Baer et al. (2008) found that meditators had higher levels of the 'Observe' facet of mindfulness when compared to non-meditators. The 'Observe' facet was then strongly associated with good psychological adjustment. Cash and Whittingham (2010) have also found that meditators have a higher degree of the 'Non-Judge' facet of mindfulness when compared to non-meditators, which then predicts lower levels of depression, anxiety, and stress related symptomatology. Further research in depressed patients has shown that the combination of mindful observation and the absence of mindless judgment (termed mindful self-awareness) can be adaptive (i.e. observing in a non-judgmental way), whereas ruminative self-awareness can lead to further psychological trauma (i.e. observation in a judgmental way) (Watkins & Teasdale, 2004). However, it is not clear how often participants have to meditate to achieve significant changes in the 'Observe', and 'Non-Judge' facets of mindfulness.

This study further defines the validity of the FFMQ when measuring mindfulness. The first aim of this study was to test the factor structure of the FFMQ in a diverse sample of Australians. The second aim of this study was to test whether different frequencies of meditation lead to significant changes in mindfulness.

## 2. Method

### 2.1. Participants

The study consisted of volunteers that identified as Australian, were over the age of 18 and were currently working in paid employment for between 3 to 76 h per week ( $M = 28.95$ ,  $SD = 12.08$ ). Ethics approval for the study was granted by the University's Ethics Committee. Three hundred and eighty one participants over 18 completed the questionnaire (76% female), ensuring that the analysis had excellent power. The sample contained four educational levels: High School (20%), TAFE Course (12%), Trade Certificate (3%), Undergraduate Degree (33%), and Postgraduate Degree (30%). It also had participants with a variety of incomes – under \$20,000 (15%), \$30,000–\$59,999 (19%), \$60,000–\$89,999 (19%), \$90,000–\$119,999 (20%), \$120,000–\$149,999 (9%), \$150,000–\$199,999 (9%), \$200,000–\$249,999 (3%), and  $> 250,000$  (3%). Due to the anonymous nature of the sampling, a response rate could not be calculated.

### 2.2. Mindfulness Questionnaire

Mindfulness was measured with the Five Facet Mindfulness Questionnaire (FFMQ, Baer et al., 2006), which has 32 items in total. In the FFMQ, there are the five subscales of 1) 'Observe' (sample item 'I remain present with sensations and feelings even when they are

unpleasant or painful'), 2) 'Describe' (sample item 'I'm good at finding the words to describe my feelings'), 3) 'Act-Aware' (sample item 'I rush through activities without being really attentive to them'), 4) 'Non-Judge' (sample item 'I tend to evaluate whether my perceptions are right or wrong') and 5) 'Non-React' (sample item 'Usually when I have distressing thoughts or images, I step back and am aware of the thought or image without getting taken over by it'). In the current study, the Cronbach's  $\alpha$  for the facets were .84 (Observe), .89 (Describe), .88 (Act-Aware), .92 (Non-Judge), and .81 (Non-React).

### 2.3. Meditation

Meditation was measured following the procedure of Baer et al. (2008). The frequency of meditation sessions was rated with an eight-point scale (from 'no sessions' to 'a session every day'), although for the purposes of the current study, we reduced the eight options to three groups that reflected little, some or the more frequent practice of meditation. Therefore, no sessions ( $n = 133$ ), one session a year ( $n = 42$ ), and one session every six months, ( $n = 41$ ) were recoded as the 'Little commitment' group ( $n = 216$ ). One session every month ( $n = 32$ ), one session every 2 weeks ( $n = 25$ ) and every week ( $n = 34$ ) were recoded as the 'Partially committed' group ( $n = 91$ ). One session every other day ( $n = 32$ ) and one session a day ( $n = 42$ ) were recoded as the 'Committed' group ( $n = 74$ ).

### 2.4. Procedure

The survey was placed online (hosted by [www.surveymonkey.com](http://www.surveymonkey.com)) and was accessed when interested participants clicked on an embedded link in the invitation to take part in the survey. Volunteers were recruited from four sources. First, an invitation was posted on the primary researchers Facebook page at two separate time points, four weeks apart. Second, a local psychologist emailed invitations to his professional contacts. Third, all staff and students at a regional university were sent an email inviting them to participate. Lastly, a local yoga studio included an invitation to the study in an e-newsletter. The first page of the survey provided information about the study (e.g. that it would take approximately 20 min to complete), and participants were asked to read this information and provide consent to participate by clicking the 'next' button. Once this button was selected participants were taken to the first page of the survey questions. The time taken to complete the survey was not controlled. No incentives were offered to complete the survey and all the information that was collected was anonymous, confidential and not identifiable.

## 3. Results

### 3.1. Exploration of mindfulness facets

Assumption testing found that the variables were linear and that no outliers were present. Principal Component Analysis (with oblim rotation) identified seven factors (eigenvalues  $> 1$ ) amongst the items. The factor analysis showed good fit,  $KMO = .903$  and Bartlett's Test of Sphericity,  $X^2(741) = 6977.57$ ,  $p < .001$ . In total, these factors accounted for 62.61% of the variance in the questionnaire data. However, the sixth and seventh factors added little variance individually, indicating that they did not differ significantly, as separate constructs. Examination of the seven-factor model also found that items cross-loaded on several factors and the Cronbach's alphas of the last two factors were unacceptably low. Therefore, to test Baer et al.'s (2006) model was a better fit, the analysis was run again, and the output was constrained to five factors. It was found that the questions loaded satisfactorily on the five factors identified by Baer et al. (2006). The final factor loadings are shown in Table 1, with the Cronbach's alphas shown in the Measures and on the diagonal in Table 2.

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