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The Italian Five Facet Mindfulness Questionnaire:

A contribution to its Validity and Reliability

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## ABSTRACT

Mindfulness refers to the ability to be aware of and attentive to internal and external events, without becoming overwhelmed or feeling the need to react automatically. Recent studies indicate that this ability is associated with the following factors: mental health, psychological functioning, and stress reduction. Although questionnaires have been developed to measure mindfulness, so far these have not been adapted for use within the Italian population. Thus, the aim of our studies was to investigate the reliability and validity of an Italian version of the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al. 2006). The FFMQ is a self-report measure that is based on a five-facet model (i.e., Observe, Describe, Act with Awareness, Nonjudge, and Nonreact). In the first study, internal consistency, factor structure, and concurrent validity analyses were carried out on a sample of 559 volunteers. The second study entailed test-retest analyses on a different sample of 43 students. The results showed that the Italian FFMQ: (a) has a similar factor structure to the original English version; (b) has good to excellent internal consistency as a whole ( $\alpha=.86$ ) with sub-scale consistency ranging from .65 to .81, and test-retest stability for the total score being .71; (c) has good concurrent validity as demonstrated by significant correlations between the FFMQ scores and a number of self-report measures related to mindfulness. Our findings support both the adaptation of the FFMQ to the Italian context as well as the conceptualization of mindfulness in multi-faceted terms.

## The Italian Five Facet Mindfulness Questionnaire: A contribution to its Validity and Reliability

In recent decades the construct of mindfulness has received increased attention. In general terms, it refers to the ability to attend to experiences occurring in the present moment in both a non-evaluative and accepting way (Brown & Ryan, 2003; Kabat-Zinn, 1990; Linehan, 1993a). As Kabat-Zinn (1990) pointed out mindfulness is the opposite of mind-blindness, i.e., the tendency to behave automatically and mechanically, as if ‘on autopilot’. Similarly, Langer (1989) defined mindlessness as the inclination to perceive reality through experience-based preconceptions. On the contrary, mindfulness allows experience of reality to unfold in the present and to thus be considered from different points of view. Being ‘mentally present’ therefore means being aware and accepting of one’s activities and mental states, as they reveal themselves in the moment.

The construct of mindfulness has its origin in Eastern spiritual traditions, specifically, in Buddhist meditation practices (Mace, 2008). In recent decades, traditional mindful meditation practices have been adapted for secular use. Mindful based interventions have now been widely available in medical and mental-health settings. These interventions include mindfulness-based stress reduction techniques which have been adapted based on Kabat-Zinn’s work (MBSR; Kabat-Zinn, 1982, 1990), Linehan’s dialectical behavior therapy for borderline personality disorders (DBT; Linehan, 1993a, 1993b), mindfulness-based cognitive therapy (MBCT; Segal, Williams & Teasdale, 2002), acceptance and commitment therapy (ACT; Hayes, Strosahl & Wilson, 1999) and other variations of these methods. A number of studies have indicated that the mindful stance is related to psychological well-being (Black, Semple, Pokhrel & Grenard, 2011; Brown & Ryan, 2003; Dekeyser, Raes, Leijssen, Leysen & Dewulf, 2008; Rasmussen & Pidgeon, 2011), and mindfulness-based interventions reduce psychological symptoms and act as a protective factor for psychological distress. Beneficial

effects, for example, have been observed on the reduction of symptoms such as anxiety, depression, self-harm, impulsive and aggressive behaviors, as well as physical symptoms and sensory pain (Dunn, Hanieh, Roberts & Powrie 2012; Farb, Anderson & Segal, 2012; Grossman, Niemann, Schmidt & Walach 2004; Mace, 2008). In general, symptom-reduction has been observed across a wide range of clinical populations, suffering from both mental and physical disorders (Baer, 2003; Grossman et al., 2004; Hartmann et al., 2012; Hayes, Masuda, Bissett, Luoma & Guerrero 2004; Kearney, McDermott, Malte, Martinez, & Simpson, 2012; Mace, 2008; Robins & Chapman, 2004; van der Lee & Garssen, 2012).

Several studies have focused on the empirical validation of mindfulness scales that consider the underlying components of mindfulness (Baer, Smith & Allen, 2004; Brown & Ryan, 2003; Cardaciotto, Herbert, Forman, Moitra & Farrow, 2008; Lau et al., 2006). The authors have emphasized that psychometrically sound measures of mindfulness are necessary for an understanding of the mechanisms and consequently the beneficial effects. Baer, Smith, Hopkins, Krietemeyer and Toney (2006) administered the five mindfulness questionnaires available at the time to a large student sample, in order to develop a reliable and valid measure of mindfulness. These scales included the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), the Freiburg Mindfulness Inventory (FMI; Buchheld, Grossman, & Walach, 2001), the Kentucky Inventory of Mindfulness Skills (KIMS; Baer et al., 2004), the Cognitive and Affective Mindfulness Scale (CAMS; Feldman, Hayes, Kumar & Greeson, 2004; Hayes & Feldman, 2004), and the Mindfulness Questionnaire (MQ; later denominated the Southampton Mindfulness Questionnaire, Chadwick, Hember, Symes, Peters, Kuipers & Dagnan 2008). After carrying out a factor analysis on the combined pool of items, the authors retained 39 items and proposed a hierarchical factor structure, characterized by a general factor for mindfulness and five secondary facets. The resulting

questionnaire was named Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006), and the five facets identified were described as:

- Observe (8 items) – Attending to sensory stimuli that mainly derive from external sources and the body as well as related cognitions and emotions.
- Describe (8 items) – Labeling internal experiences with words.
- Act with Awareness (8 items) – An ongoing attention to, and awareness of present activity and experience.
- Nonjudge (8 items) – Having a non-evaluative attitude towards one's thought and emotional processes while focusing on inner experiences, rather than taking on a critical stance.
- Nonreact (7 items) – Assuming a stance that implies being able to perceive thoughts and feelings, especially when they are distressing, but without feeling compelled to react or being overwhelmed.

More recent studies have supported the validity of the FFMQ for the assessment of mindfulness and its correlates, in both clinical and non-clinical samples across different languages and cultural backgrounds (Baer et al. 2008; Bohlmeijer, ten Klooster, Fledderus, Veehof & Baer 2011; Bränström, Kvillemo, Brandberg & Moskowitz, 2010; Carmody & Baer 2008; Deng, Liu, Rodriguez & Xia, 2011; Fernandez, Wood, Stein & Rossi, 2010; Heeren, Douilliez, Peschard, Debrauwere & Philippot, 2011; Lijla et al., 2011; Sugiura, Sato & Ito 2011; Veehof, ten Klooster, Taal, Westerhof & Bohlmeijer, 2011). However, more research is called for to investigate the extent to which Baer et al.'s (2006) findings can be generalized to different samples. In Italy the wide-spread interest for mindfulness is suggested by the numerous clinical contexts in which it is practiced and taught. At the same time, research on the construct and its applications is rare. In fact, only two empirical studies have been published to date (Fossati, Feeney, Maffei & Borroni, 2011; Fossati, Vigorelli

Porro, Maffei & Borroni, 2012), as a PUBMED and PsycINFO search by means of the cue words 'mindfulness' and 'Italian' confirmed. Both studies administered translated versions of the questionnaires on mindfulness with the aim to investigate the relationship between mindfulness and personality disorders in non-clinical adolescents (Fossati et al., 2011) and adult outpatients (Fossati et al., 2012). As the authors had predicted, both studies found that high levels of mindfulness were negatively associated with characteristics of personality disorders.

The main objective of the present study was to address the aforementioned lack of valid measures of mindfulness in Italy, with the intent to also contribute to the cross-cultural adaptation of the FFMQ. Two studies were carried out to investigate the validity and reliability of the Italian translation of the FFMQ. Study 1 examined the factor structure, internal consistency and concurrent validity of the questionnaire in a sample of undergraduate psychology students and a normative adult sample. Study 2, analyzed the test-retest reliability of a smaller sample of 43 University students who had not participated in the first study.

## Study 1

### Method

The FFMQ was translated into Italian and administered along with other self-report measures to a large Italian sample of students and adults.

**The translation of the FFMQ.** The adaptation of the FFMQ to an Italian population included a translation and a subsequent back-translation procedure (Brislin, 1980; Geisinger, 2003; Van de Vijver & Hambleton, 1996). Several authors (L. B., C. G., G. A.) translated the original English version of the FFMQ from English to Italian. Then, a bilingual author (A. T.), who was blind to the original questionnaire, re-translated this version back into English. Finally, the two English versions were compared in order to resolve inconsistencies.

**Participants.** The initial sample consisted of 636 Italians: 355 were undergraduate University students; 281 were non-student adult volunteers, who were recruited in order to extend the age range of the sample. After eliminating subjects with missing data on one or more items of the FFMQ, the sample size was reduced to 559. This final sample ranged in age from 18 to 64 years ( $M = 33.0$ ;  $SD = 12.1$ ); The majority (70.7%) of the participants were female<sup>1</sup>. All were Italian citizens and identified themselves as Italian and Caucasian.

**Procedure.** All participants were handed the questionnaires along with a brief description of the study and an informed consent form. The student sample was recruited through an online service of the University of Milano-Bicocca. The non-student sample was collected by using a strategy similar to that of the snowball sampling, i.e., a small group of students (not included in the student sample) asked other people (relatives, friends, and acquaintances) to take part in the study by anonymously completing the questionnaires (envelopes were provided for each participant so as to keep the answers unavailable to the students who collected the questionnaires). Each student recruited at least 10 participants as part of a homework assignment in a personality assessment undergraduate course.

All participants were volunteers and filled out the questionnaires anonymously. The students involved in the study, either as participants or as recruiters, received class credit in exchange for participation. The non-student volunteer participants did not receive any compensation for their participation.

**Measures and Predictions.** To validate the Italian version of the FFMQ we included measures adopted by Baer and colleagues (2006) in their original validation study. Validated Italian measures were used and when these were unavailable, the scales were translated and subsequently back-translated.

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1 Three records were missing gender information and 3 were missing ages.

*The Five Facets Mindfulness Questionnaire (FFMQ; Baer et al., 2006).* The FFMQ is a 39 item self-report instrument developed in order to measure five aspects on a 5-point Likert scale, ranging from 1 (never or very rarely true) to 5 (very often or always true), with higher total scores reflecting a greater degree of mindfulness. According to Baer et al. 's (2006) original study, the FFMQ measures one general mindfulness factor and five secondary facets (Observe, Describe, Act with Awareness, Nonjudge, and Nonreact). In that study, Cronbach's alphas ranged from .75 to .91 for all scales, except for Nonreact, that had an alpha value of .67. Each sub-scale correlated significantly and in the expected directions with other mindfulness questionnaires, related constructs, self-report well-being measures, and with the absence of psychopathological symptoms. An exception was the factor Observe, which had no significant correlation with Nonjudge and correlated positively with measures of dissociation, psychological symptoms, absent-mindedness and thought suppression (Baer et al., 2006). Similar results have been found across different languages and cultures (Deng et al., 2011; Heeren et al., 2011; Lijla et al., 2011; Sugiura et al., 2011). However, when a subsample of experienced meditators was examined, Observe correlated positively and significantly with Nonjudge, thus suggesting that in people with no experience in meditation, attending to experiences may be associated with judging them (Baer et al., 2006; 2008).

*The Toronto Alexithymia Scale (TAS-20; Bagby, Taylor & Parker, 1993).* The TAS-20 is often referred to as the gold standard method for assessing alexithymia. Participants are asked to rate 20 items on 5-point Likert scale, with higher total scores indicating an increase in alexithymia. In this study we used the Italian version of the TAS-20 (Bressi et al., 1996), which has high Cronbach alphas in both clinical and non-clinical groups (.82 and .75 respectively) and a high test-retest reliability over 2 weeks ( $r = .86$ ). Mindfulness implies observing and labeling one's mental processes and feelings, we therefore predicted a negative

correlations between the TAS-20 and our Italian version of the FFMQ, in particular with the Observe and Describe sub-scales.

*The Big Five Questionnaire-2 (BFQ-2; Caprara, Barbaranelli, Borgogni & Vecchione, 2007).* The BFQ-2 is a self-report measure of personality traits and behavioral preferences. For this study, we selected only the items measuring Mental Openness and Emotional Stability. These two dimensions are valid and reliable measures of a tendency to accept experience (Mental Openness) and the ability to cope with negative emotions (Emotional Stability) according to Caprara et al. (2007). Given that mindfulness is associated with lower levels of negative affect and a greater ability to observe inner feelings and external stimuli, we expected positive correlations between the FFMQ and these BFQ-2 scales. In particular, the Nonreact facet and the Emotional Stability scale were expected to be positively correlated, since they both describe the ability to come to terms with distressing feeling, thoughts and situations without being overwhelmed by them.

*The Trait Meta-Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey & Palfai, 1995).* The TMMS is a 30-item self-report measure of emotional awareness and understanding. Items are rated on a 5-point Likert scale, with higher scores reflecting greater attention to emotions, as well as the ability to regulate emotions. Salovey et al. (1995) obtained an adequate to good internal consistency for the total scores and for each sub-scale. Further, the scale was reported to be significantly associated with less life-satisfaction and with fewer depressive episodes (Martinez-Pons, 1997). The scale was adapted into Italian through a back-translation procedure since an Italian version was not available. We predicted positive correlations between the TMMS and the FFMQ. In particular we expected to replicate the results of Baer et al. (2006), who found positive correlations with the Observe and Describe facets, as these entail identifying external and internal experiences and labeling them.

*The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004).* The DERS is a 36-item self-report measure that assesses significant difficulties in emotion regulation. Items are rated on a 5-point Likert scale, with higher scores reflecting greater difficulties. For this study we used an Italian validated version (Giromini, Velotti, de Campora, Bonalume & Zavattini, 2012), which showed adequate to excellent internal consistency (alpha values ranged from .77 to .92) and test-retest reliability (ICCs ranged from .49 to .73), and good validity (significant correlations with related constructs were found, and a clinical vs. non-clinical sample comparison yielded significant differences with large effect sizes). Because the mindfulness construct includes awareness and acceptance of emotions, we expected negative correlations between the DERS and the FFMQ.

*Scale of Dissociative Activities (SODAS; Mayer & Farmer, 2003).* The SODAS is a self-report measure of dissociation, with items being rated on a 5-point Likert scale. Higher scores reflect acting without awareness, a lack of perception of inner experience, memory disruptions and perception of unreality. According to Mayer and Farmer (2003) the SODAS has good internal consistency (an alpha value equal to .95) and test-retest reliability ( $r=.77$ ), and is significantly correlated with other measures of dissociation. Italian versions of the SODAS were also not available. The scale was therefore adapted by means of the back-translation procedure. Dissociation, as measured by the SODAS, implies lack of awareness of actions and inner experiences. We therefore predicted a negative correlation with the FFMQ, especially in the case of the Act with Awareness sub-scale that refers to the ability to exercise constant awareness during activities.

*White Bear Suppression Inventory (WBSI; Wegner & Zanakos, 1994).* The WBSI is a 15-item self-report measure of thought suppression. Studies have shown that its internal consistency is good (alpha value of .89) and test-retest reliability is satisfactory ( $r=.80$ ) (Muris, Merckelbach & Horselenberg, 1996). Because no validated Italian versions of the

WBSI was available, we adapted it to Italian by means of the back-translation procedure. Negative correlations between the WBSI and the FFMQ were expected, especially in relation to the Nonjudge sub-scale that describes accepting thoughts and feelings without critical judgment, while the WBSI measures attempts to suppress or avoid internal experiences.

## Results

**FFMQ Scores.** Descriptive statistics for the FFMQ scores are indicated in Table 1. All scores were normally distributed. Age was modestly correlated with the Describe,  $r = -.09$ ,  $p = .04$ , and Act with Awareness facets,  $r = .09$ ,  $p = .04$ . Male participants scored a little lower on Observe,  $M = 24.1$  ( $SD = 5.8$ ) vs.  $M = 25.3$  ( $SD = 5.3$ ),  $t(279.5^2) = -2.3$ ,  $p = .02$ ,  $d = .16$ , and slightly higher on Nonjudge,  $M = 28.8$  ( $SD = 5.7$ ) vs.  $M = 27.2$  ( $SD = 5.9$ ),  $t(554) = 2.9$ ,  $p < .01$ ,  $d = .27$  than female participants. None of the other FFMQ scores were significantly correlated with age, nor were other significant gender differences observed. Correlations among the FFMQ sub-scales and between the sub-scales and the total FFMQ score are shown on Table 2. Similar to Baer et al.'s (2006) findings, the five facets were not strongly correlated amongst themselves while all facets correlated positively with the total FFMQ score. Finally, in line with previous findings among nonmeditating samples (Baer et al., 2006; 2008; Lilja et al., 2011; Sugiura et al., 2011) the sub-scale Observe was negatively correlated with the Nonjudge and Act with Awareness sub-scales.

**Factorial Structure.** Baer et al. (2006) suggested a hierarchical model, in which Observe, Describe, Act with Awareness, Nonjudge and Nonreact were defined as facets of an overall mindfulness construct. To test if such a model was also replicated in our Italian sample, we conducted a confirmatory factor analysis (CFA), using a correlation matrix of individual items as input, and a maximum likelihood estimation method (Hu, Bentler, &

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2 Since homoscedasticity could not be assumed, the Welch-Satterthwaite method was used to adjust the degrees of freedom.

Kano, 1992). This analysis was conducted using structural equation modeling by means of Lisrel 8.50 (Jöreskog & Sörbom, 2001).

To evaluate the goodness of fit of the model, four indices were considered with particular attention: (1) the root mean square error of approximation (RMSEA); (2) the comparative fit index (CFI); (3) the nonnormed fit index (NNFI); (4) the ratio of the value of chi-square to its degrees of freedom ( $\chi^2 / df$ ). In detail, the following criteria were considered: the RMSEA had to be around .05 for a close fit, .08 for a fair fit, and .10 for a marginal fit (Browne & Cudeck, 1993), the CFI and NNFI had to be .90 or higher for a good fit (Bentler & Bonett, 1980), and the  $\chi^2 / df$  had to be close to 2.00 for a good fit, and lower than 5.00 for a quite promising fit (Watkins, 1989).

According to these criteria, the CFA performed on the Italian version of the FFMQ replicated the factorial structure obtained by Baer et al. (2006) rather well. Indeed, the RMSEA indicated a fair to close fit (RMSEA = .072; 90% confidence interval = .069 – .075), the CFI and NNFI were not far from the threshold value of .90 (CFI = .83; NNFI = .82), and the  $\chi^2 / df$  was quite promising to good ( $\chi^2 / df = 3.918$ ). Furthermore, all factor loadings were  $\geq .30$  (for details see Figure 1).

**Internal Consistency.** To determine the internal consistency of the Italian version of the FFMQ, Cronbach's alpha was calculated for both the total and for each sub-scale score. As shown in Table 3, the results indicate that the FFMQ has a high internal consistency, with Cronbach's alpha = .86 for the total score, and acceptable values for the sub-scales, i.e., alpha  $\geq .74^3$ . It should be pointed out however, that two items (i.e., item 33 "*Usually when I have distressing thoughts or images, I just notice them and let them go*" and item 11 "*I notice how food and drinks affect my thoughts, bodily sensations, and emotions*") obtained low – albeit significant – correlations (i.e.,  $< .2$ ) with the total FFMQ score.

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3 According to Nunnally (1978) values of .70 or higher are considered acceptable.

**Concurrent Validity.** To provide data on the concurrent validity of the Italian version of the FFMQ, correlations between the FFMQ scores and the above-indicated questionnaires, measuring related constructs were investigated. The values of Cronbach's alpha for each measure included in this analysis was higher than .70. Results are presented in Table 4. As in the study of Baer and colleagues (2006), our results indicate that four of the five facets of the FFMQ (i.e., Describe, Act with Awareness, Nonjudge and Nonreact) correlated positively with measures related to mindfulness (e.g., emotional stability), and negatively with the scales that assess aspects which may be regarded as mind-blinded or mindless. As predicted, the facet Act with Awareness was negatively correlated with the dissociation scale, and the sub-scale Nonjudge correlated with a tendency to dissociation and thought suppression. The Describe facet was negatively associated with alexithymia and positively with emotional awareness. As expected, the highest correlation of the Nonreact facet was found with the scale assessing emotional stability. Our results also replicated those of Baer and colleagues (2006), by finding that the Observe facet apart from correlating positively with mental openness and emotional awareness, was also associated in a positive direction with dissociation and thought suppression.

## Study 2

### Method

To assess the test-retest reliability of the Italian FFMQ, a second sample was obtained.

**Participants.** Participants were 43 undergraduate Psychology University students who had not participated in Study 1 and who compiled the questionnaires in exchange for class credit. Ages ranged from 19 to 48 years ( $M = 23.5$ ;  $SD = 6.0$ ); 81.4% were female.

**Procedure.** During a psychology class, students were invited to complete the FFMQ, indicating their University ID number. All were informed that participation was voluntary

and that written consent was required before taking part in the study. Of these students, 43 agreed to complete the FFMQ again 4 weeks later. Class credit was given in exchange for participation.

## **Results**

The intraclass correlation coefficient (ICC) for the total FFMQ was .71. The ICCs for the sub-scales were: .63 for Observe; .81 for Describe; .71 for Act with Awareness; .65 for Nonjudge; .63 for Nonreact. According to the suggested benchmarks (Cicchetti, 1994; Cicchetti & Sparrow, 1981; Fleiss, 1981), the test-retest of the Italian FFMQ is *good to excellent*.

## **General Discussion**

A widespread interest in the construct and practice of mindfulness during recent decades encouraged the development of different empirical methods for its assessment. In particular, mindfulness-related techniques in Italy are beginning to be applied to clinical contexts and validated instruments for its assessment are thus required. As a consequence, the main objective of this study was to investigate the validity and reliability of the Italian version of the FFMQ. Two studies were conducted: the first aimed to examine the factorial structure, the internal consistency and the convergent validity of the questionnaire; the second to assess test-retest reliability.

Results, overall, supported both the adaptability of the FFMQ to the Italian context and the concept of mindfulness as a multi-dimensional construct. The factor structure of the Italian version replicated the one obtained by Baer et al. (2006). In fact, the internal consistency and test-retest stability were adequate to excellent, and most of the scores correlated in the expected direction with a number of theoretically-related constructs. In other words, all five facets identified by Baer et al. (2006), appeared to be distinct, valid and reliable features of mindfulness.

The dimensions of the FFMQ were associated with other constructs selected for the evaluation of the convergent validity. As in Baer et al. (2006), the ability to observe internal and external sensations and experiences was associated with emotional intelligence, while the capacity to express one's inner experience in words (Describe) was, as expected, associated negatively with alexithymia and positively with emotional intelligence. Not surprisingly, the capacity to be mindful of ongoing activities (Act with Awareness) was negatively associated to dissociation. Finally, the scale assessing a non-judgmental stance towards feelings and thoughts (Nonjudge) was negatively associated with emotion dysregulation, thought suppression and dissociative tendencies. Also, as expected, the propensity to assume a stance that implies observing but without feeling compelled to react to distressing experiences (Nonreact) was positively related to emotional stability.

The sub-scale Observe was associated to a lesser extent to mindfulness as a whole (the total score of the FFMQ) than the other four facets, and a negative, albeit modest, association of the ability to Observe was found with the mindfulness-related dimensions of Acting with Awareness and Non-Judging. Furthermore, Observe was positively associated with the self-reported measures of dissociation and thought suppression. This finding was however in line with Baer et al., (2006), who hypothesized that the content of the Observe factor, with its attention to external stimuli and body-experiences, differs from the other factors, which tend to refer to cognition, emotions, behaviors, and/or attention. They further suggested that the Observe factor may be more sensitive to meditation experience than others. Indeed, according to Baer et al.'s (2006) findings, the sub-scale Observe is highly correlated with a general mindfulness factor, but only if the FFMQ is administered to experienced meditators. Thus, our Observe-related results may be in part explained by the lack of an experienced meditator sample in our studies. It should be noted, in any case, that Observe clearly emerged from the factor analysis, showed good internal consistency and test-retest stability, and did show

significant correlations (in the expected direction) with both mindfulness (i.e., with the FFMQ total scores) and emotional intelligence (i.e., with the TMMS scores).

A number of limitations for both our studies should also be highlighted. First, our studies only included self-report measures which may lead to misleading interpretations of the items. Second, the divergent validity of the FFMQ was not addressed. Third, three of the scales administered to investigate the concurrent validity of the Italian FFMQ have not yet been cross-validated with the Italian population. Fourth, given that in study 1, participants were asked to complete several questionnaires concerning relatively similar constructs, respondent fatigue may have occurred. Therefore, more research on Italian samples, and in particular, with participants who have experience in meditation or mindfulness techniques is warranted.

Despite the limitations and uncertainties of our present studies, the results provide a contribution to mindfulness research, suggesting that the FFMQ is adaptable to the Italian context, as well as provide further support for Baer et al. (2006)'s multi-dimensional model of mindfulness.

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Table 1. Descriptive Statistics for FFMQ Scores (N = 559)

	Male			Female			Entire Sample		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
<b>Student Sample</b>									
Observe	76	25.2	5.0	240	25.6	5.1	318	25.5	5.1
Describe	76	27.4	5.6	240	28.7	5.3	318	28.4	5.4
Act with	76	26.8	5.6	240	28.4	5.4	318	28.1	5.5
<b>Awareness</b>									
Nonjudge	76	27.5	6.4	240	27.7	6.0	318	27.7	6.1
Nonreact	76	20.9	4.2	240	19.8	3.8	318	20.1	3.9
Total	76	127.8	16.0	240	130.1	15.1	318	129.6	15.3
<b>Non-Student Sample</b>									
Observe	87	23.1	6.2	153	24.9	5.6	241	24.3	5.9
Describe	87	27.1	5.6	153	27.2	5.9	241	27.1	5.8
Act with	87	31.1	4.9	153	28.3	5.3	241	29.3	5.3
<b>Awareness</b>									
Nonjudge	87	29.9	4.9	153	26.6	5.6	241	27.7	5.6
Nonreact	87	19.7	4.7	153	19.8	4.0	241	19.8	4.3
Total	87	130.9	15.1	153	126.8	15.1	241	128.2	15.2
<b>Entire Sample</b>									
Observe	163	24.1	5.8	393	25.3	5.3	559	24.9	5.5
Describe	163	27.2	5.6	393	28.1	5.6	559	27.8	5.6
Act with	163	29.1	5.6	393	28.4	5.4	559	28.6	5.4
<b>Awareness</b>									
Nonjudge	163	28.8	5.7	393	27.2	5.9	559	27.7	5.9
Nonreact	163	20.3	4.5	393	19.8	3.9	559	19.9	4.1
Total	163	129.4	15.6	393	128.9	15.2	559	129.0	15.3

Note. Three records were missing gender information.

Table 2. Correlations Among FFMQ Subscale and Total Scores (N = 559)

	Observe	Describe	Act with Awareness	Nonjudge	Nonreact
Observe	-				
Describe	.24**	-			
Act with Awareness	-.13**	.27**	-		
Nonjudge	-.11**	.20**	.38**	-	
Nonreact	.24**	.32**	.09*	.16**	-
Total	.42**	.71**	.58**	.60**	.56**

Note. \*  $p < .05$ ; \*\*  $p < .01$ .

Table 3. Internal Consistency Reliability Analyses for the FFMQ, Italian Version (N = 559)

FFMQ Scale	No. of Items	$\alpha$	Range of Item-Total Correlations	$\alpha$ of Baer et al.'s version (2006)
Observe	8	.79	.55 - .74	.83
Describe	8	.89	.61 - .82	.91
Act with Awareness	8	.86	.66 - .76	.87
Nonjudge	8	.86	.63 - .78	.87
Nonreact	7	.74	.48 - .70	.75
Total	39	.86	.10 - .59	-*

Note. \*Baer et al. (2006) did not report the alpha value of the total FFMQ score.

Table 4. Concurrent Validity Analyses for the FFMQ, Italian Version

FFMQ Scale	TAS (N = 513)	BFQ-2 – M (N = 525)	BFQ-2 – S (N = 513)	TMMS (N = 526)	DERS (N = 484)	SODAS (N = 487)	WBSI (N = 546)
Observe	-.17**	.24**	-.07	.30**	-.06	.23**	.09*
Describe	-.66**	.39**	.15**	.56**	-.39**	-.21**	-.24**
Act with Awareness	-.38**	.21**	.33**	.31**	-.44**	-.55**	-.31**
Nonjudge	-.42**	.23**	.48**	.35**	-.56**	-.52**	-.56**
Nonreact	-.22**	.27**	.46**	.26**	-.35**	-.15**	-.24**
Total	-.65**	.46**	.45**	.62**	-.62**	-.43**	-.44**

Note. TAS-20 = 20-item Toronto Alexithymia Scale, Total Score; BFQ-2 – M = Big Five Questionnaire-2, Mental Openness; BFQ-2 – S = Big Five Questionnaire-2, Emotional Stability; TMMS = Trait Meta-Mood Scale, Total Score; DERS = Difficulties in Emotion Regulation Scale, Total Score; SODAS = Scale of Dissociative Activities, Total Score; WBSI = White Bear Suppression Inventory, Total Score; \*  $p < .05$ ; \*\*  $p < .01$ .

*Figure Caption*

Figure 1.

*Factorial Structure of the Italian FFMQ Obtained from CFA (N = 559).*

*Notes:* The coefficients describing the loadings of the five facets on the broad mindfulness construct are maximum likelihood estimates. Maximum likelihood estimates of item loadings on facets are also provided. For ease of presentation, error terms for items are omitted.

(r) = reversed item.

Figure 1

