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Mindfulness training and practice: Individual differences in mindfulness facets and its relation to emotional regulation, perceived stress and well-being

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Abstract

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Several studies suggested a positive relation between mindfulness and psychological health positive outcomes. But are still lacking studies that can relate facets of mindfulness with specific psychological health dimensions. The main objective of this study is to analyze the relation between the mindfulness facets (non-reactivity to inner experience, noticing sensations, perceptions, thoughts and feelings, acting with awareness, describing with words, non-judging of experience) and some specific psychological health dimensions such as emotion regulation (non-acceptance, goals, impulse, awareness, strategies and clarity), perceived stress and well-being. We will analyze these dimensions according to participant's mindfulness training and practice. We used validated self-reporting instruments: the Five Facet Mindfulness Questionnaire (FFMQ, Baer et al., 2006), the Difficulties in Emotion Regulation Scale (DERS, Gratz & Roemer, 2004), the Perceived Stress Scale (PSS, Cohen, Kamarck & Mermelstein, 1983) and the IWP Multi-affect Indicator (IWP, Warr, 1990). We evaluated 258 individuals who agreed to participate in this study, of which 72,1% were women, 47,7% had already attended mindfulness training, 52,3% never had and 40,3% practice mindfulness meditation regularly. We performed a Pearson's r correlation and T-Tests to compare means. Results point to clear correlations between mindfulness facets, emotion regulation, stress and well-being. Perceived stress revealed significantly lower levels in individuals who attended mindfulness training and practice daily meditation. Higher scores in mindfulness facets and related higher levels of awareness, clarity and well-being can also be found. The findings indicate that mindfulness training and regular mindfulness meditation practice have a potential to contribute to improving mental health outcomes.

Keywords: Mindfulness, emotion regulation, perceived stress, well-being.

1. Introduction

Mindfulness and associated practices are generally attributed to Buddhist traditions (Chiesa & Malinowski, 2011; Keune & Forintos, 2010) and are widely associated with a variety of psychological states and processes in the psychological and scientific literature (Bergomi, Tschacher, & Kupper, 2013; Hayes & Shenk, 2004; Hölzel et al., 2011; Lutz, Dunne, & Davidson, 2007; Roemer & Orsillo, 2003). Mindfulness is defined as giving attention to the present moment and to the experiences in an accepting, non-reactive and non-judgmental way (Baer, Smith, Hopkins, Krietemeyer & Toney, 2006; Brown & Ryan, 2003; Kabat-Zinn, 1990; Hart, 1987; Kabat-Zinn, 2003; Linehan, 1993a; Marlatt & Kristeller, 1999). Mindfulness practices are referred in psychological literature as decentering (Shapiro, Carlson, Astin & Freedman, 2006), re-perceiving and cognitive insight (Chambers, Gullone & Allen, 2009; Shapiro et al., 2006) and consist in focusing our attention on our thoughts, emotions and sensations, observing them as they arise and as they pass away. Relaxation may be considered as an outcome of mindfulness meditation because there are various mindfulness meditation strategies that follow that purpose. However, induce relaxation is not the purpose of mindfulness training. Learning to observe non-judgmentally the present moment is the primary reason for engaging in mindfulness training. Acceptance is described as one of the several foundations of mindfulness practice (Kabat-Zinn, 1990). Hayes (1994) suggests that acceptance is all about "experiencing events fully and without defense, as they are" (p. 30). It's not about trying to change unpleasant symptoms but accepting them as they are. In the other way, experiential avoidance or suppression have been found to result in a persistent stressed or depressive states (Bird, Mansell, Dickens, & Tai, 2013).

As the main purpose of this study is to analyze the relationship between mindfulness facets, emotion regulation, stress and well-being, we should start to make a point about these concepts. Starting with mindfulness facets, Baer et al. (2006), proposed a facet structure of mindfulness as the authors explain mindfulness as a multifaceted construct. The authors point to five facets of mindfulness: (1) non-reactivity to inner experience, that is to perceive feelings and emotions without having to react to them, without getting lost in them, just noticing them; (2) observing sensations/thoughts/feelings, that is to notice how emotions express themselves through my body, whether they are pleasant or unpleasant, to deliberately notice the sensations of my body and intentionally stay aware of my feelings and emotions and how they affect my thoughts and behavior; (3) acting with awareness, that is not rushing through activities without being really attentive to them, without paying attention to them, making to not getting lost in thoughts and feelings; (4) describing/labelling with words, that is finding the words to describe feelings, perceptions, opinions or expectations at the moment in considerable detail; (5) non-judging of experience, that is not to criticize myself for having emotions, feelings and perceptions whether I judge them as being right or wrong or being good or bad, refraining from that usual evaluation. Based on this five facets Baer et al. (2006) developed the Five Facet Mindfulness Questionnaire (FFMQ) that was used in the present study.

As for emotion regulation, several authors examined the mechanisms of mindfulness within the context of emotion regulation strategies (Chambers, Gullone & Allen, 2009; Garland et al., 2010; Hoffman & Asmundson, 2008). Gross and Thompson (2007) proposed that there are a set of emotion regulation strategies that are (1) situation selection, (2) situation modification, (3) attentional

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deployment, (4) cognitive change and (5) response modulation. Situation selection is the strategy that involves taking actions so that the present situation would be more pleasant to the individual and could give rise to the emotions he would like to have. This means that the individual can predict the future consequences of a certain situation and tries to take the appropriate actions to avoid the situation or to be in it. The situation selection assumes that individuals remember how they felt previously in a similar situation and can predict how they will feel currently. Situation modification is the strategy that involves modifying the situation directly. This means that individuals modify external physical environments. For example, if there is a romantic interest individuals tend to take some form of mood lighting and romantic music. Attentional deployment is the strategy that involves redirecting attention within a given situation. This is a situation selection but in an internal version. In this strategy are included the physical withdrawal of attention (e.g., covering your eyes) and the redirection of attention (e.g., telling an interesting story to children to redirect his excited state). Cognitive change is the strategy that involves changing the meaning that the individual gives to the present situation in a way that alters the situation's emotional significance. This is related with the changing of how one feels about a specific situation or about one's capacity to manage all the demands it poses. Reappraisal is one form of cognitive change (Gross, 2002) and involves changing the meaning of a certain situation so that there is a change in the individual's emotional response to that situation (Garland, Gaylord & Park, 2009; Garland et al., 2010). Response modulation is the emotion regulation strategy that refers to influencing psychological or behavioral responses directly. For example, exercise and relaxation practices may be used to decrease individual negative emotions (Michalsen et al. 2005).

Gratz & Roemer (2004) developed the Difficulties in Emotion Regulation Scale (DERS) with six factors that reflect the multifaceted dimension of emotion regulation. The six factors can be labelled (1) Non-acceptance, (2) Goals, (3) Impulse, (4) Awareness, (5) Strategies, and (6) Clarity. Non-acceptance reflects a tendency to non-accepting emotional responses and reactions towards distress. Goals means that there is a difficulty in engaging in goal-directed behavior and it is related to difficulties in concentrating and accomplishing tasks when negative emotions are present. Impulse is related with difficulties in impulse control when experiencing negative emotions. Awareness reflects the tendency to acknowledge and to attend emotions. Strategies are related to the belief that there is always little that can be done to regulate emotions effectively and is also related to limited access to emotion regulation strategies. Clarity is related to the degree in which individuals know the emotions they are experiencing. The DERS scale was used in the present study.

Regarding stress, mindfulness practices showed to increase our resources to become more resilient and to be very effective at reducing stress and anxiety. So they have been gaining great attention because of their association with low stress levels (Baer, Carmody & Hunsinger, 2012; Carmody, Baer, Lykins & Olendzki, 2009; Chiesa & Serretti, 2010; Chu, 2010; Hofmann, Sawyer, Witt & Oh, 2010; Ivanovski & Malhi, 2007; Keng, Smoski & Robins, 2011; Oman, Hedberg & Thoresen, 2006). Stress can be defined as a psychological condition which results from an imbalance between life demands and individual's ability to manage those demands. In some degree, stress has an important role during our lifetime. But usually higher stress levels are related to diseases, lower levels of well-being and poor life quality. A positive correlation between stressors and symptoms of distress is well established (Pengilly

& Dowd, 2000). Mindfulness is one tool that can buffer stress effects (keng et al., 2011; Loizzo, 2000). To measure stress, Cohen, Kamarck and Mermelstein (1983) developed the Perceived Stress Scale. This scale is used to assess individual's appraisal of their life as stressful and it was used in the present study.

Mindfulness is also capable of increasing well-being (Roche, Haar & Luthans, 2014). The general affective well-being model was introduced to the workplace by Peter Warr (1987; 1990). This conceptualization classifies work-related emotions into the same two dimensions: pleasure and activation. A certain degree of pleasure/satisfaction or displeasure/dissatisfaction (horizontal dimension) may be accompanied by high or low levels of activation (vertical dimension), and in turn, these levels of activation may be accompanied by different levels of pleasure. Four quadrants result from the combination of the axis of pleasure and the axis of activation level: anxiety (high activation and low pleasure), enthusiasm (high activation and high pleasure), depression (low activation and low pleasure), and comfort (low activation and high pleasure). Consequently, this combination forms two orthogonal axes: (2a) anxiety/ (2b) comfort and (3a) depression/ (3b) enthusiasm. Based on his conceptualization of affective well-being Warr (1990) developed the IWP Multi-Affect Indicator. Its aim is to operationalize this multidimensional conceptualization of work related affective well-being and it used in the present study.

2. Problem Statement

Many performed studies search for new ways and paths that lead to a healthier life. Mindfulness is found to be one of the most relevant practices that contribute to human flourishing and development. Accumulated evidence showed that mindfulness is related to greater subjective well-being (Baer et al., 2006; Feldman, Hayes, Kumar, Greeson & Laurenceau, 2007; Gu, Strauss, Bond & Cavanagh, 2015; Hofmann, Sawyer, Witt & Oh, 2010; Klainin-Yobas, Cho & Creedy, 2012; Wenzel, Versen, Hirschmuller & Kubiak, 2015). Laboratory experiments also suggest that mindfulness is associated with decreased reactivity to emotional stimuli or acute stressors (Keng et al., 2011).

We performed this present study because we assume this is a very important topic of research that benefits the whole society and we intended to bring out one more contribute to mindfulness research. We pretended to examine the relation between mindfulness training and regular mindfulness meditation practice with individual differences in mindfulness facets and its relation to individual's well-being, stress, and emotion regulation scores. We explored the facets of mindfulness as outcomes of the mindfulness practice following the research lines of other authors (Bishop et al., 2004; Brown & Ryan, 2004).

3. Research questions

In this study, we explored the idea that mindfulness training and practice might show its powerful effects on emotion regulation, well-being, and stress. Therefore and based on previous literature it is expected that the scores in mindfulness facets are correlated to higher emotion regulation, higher well-being, and lower stress. Two main research questions were formulated: "Is there a relationship between

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mindfulness facets, emotion regulation, well-being, and stress?" and "Does mindfulness training and practice contribute to mindfulness facets, emotion regulation, well-being, and stress?"

4. Purpose of the study

The overall purpose of this study is to examine the relationship between mindfulness facets, emotion regulation, well-being, and stress. To answer our research questions we followed some guidelines in our data analysis: (a) we analysed the relationship between mindfulness facets and emotion regulation, (b) we analysed the relationship between mindfulness facets and well-being, (c) we analysed the relationship between mindfulness facets and stress; (d) we analysed individual differences in mindfulness facets between those who have attended mindfulness training and those who have not and between those who regularly practice mindfulness meditation and those who do not; (e) we analysed individual differences in emotion regulation between those who have attended mindfulness training and those who have not and between those who regularly practice mindfulness meditation and those who do not; (f) we analysed individual differences in well-being between those who have attended mindfulness training and those who have not and between those who regularly practice mindfulness meditation and those who do not; (g) we analysed individual differences in stress between those who have attended mindfulness training and those who have not and between those who regularly practice mindfulness meditation and those who do not.

5. Research methods

5.1. Participants

Two hundred and fifty-eight adults volunteered to take part in the study. In sample 186 (72.1%) were women and 72 (27.9%) were men. One hundred and forty-three were married. 52.3% (n=135) of participants have a high school education. Participants had no compensation for their participation.

5.2. Measures

To measure mindfulness was used the Five Facet Mindfulness Questionnaire (FFMQ, Baer et al. 2006, Portuguese translation and adaptation by Gregório & Pinto Gouveia, 2010), a 39-item self-report instrument consisting of five subscales corresponding to five mindfulness facets: observing, describing, non-judging of inner experience, non-reactivity to inner experience and acting with awareness. Participants endorse their tendency to be mindful each day, based on a 5-point scale from 1 ("Never or very rarely true") to 5 ("Very often or always true"). In our sample, internal consistency was good for all the FFMQ subscales (alphas .794 to .905).

To measure emotion regulation was used the Difficulties in Emotion Regulation Scale (DERS, Gratz & Roemer, 2004, Portuguese translation and adaptation by Veloso, Gouveia & Dinis, 2011), a 36-item self-report measure used to assess six dimensions of emotion regulation: non-acceptance, goals, impulse, strategies, clarity, and awareness. Participants endorse how often they believe each item

pertains to them on a 5-point scale from 1 (“almost never”) to 5 (“almost always”). Internal consistency was good for all DERS subscales (alphas .731 to .923).

To measure stress was used the Perceived Stress Scale (PSS, Cohen, Kamarck & Mermelstein, 1983, Portuguese translation and adaptation by Trigo, Canudo, Branco & Silva, 2010), a 10-item self-report measure used to assess individual’s appraisal of their life as stressful (i.e. unpredictable, uncontrollable and overloading). Participants rated how often they had experienced in the last month on a 5-point scale from 0 (“never”) to 4 (“very often”). Internal consistency was good for PSS (alpha=.893).

To measure well-being was used the IWP Multi-affect Indicator (IWP, Warr, 1990, Portuguese translation and adaptation by Gonçalves & Neves, 2011), a 12-item self-report measure used to assess to what extent participants have felt some feelings about their job over the past weeks. It comprises six positive feelings (comfortable, calm, relaxed, motivated, enthusiastic and optimistic) and six negative feelings (tense, anxious, worried, depressed, melancholic and unhappy). Previous studies supported a four-factor structure: anxiety, comfort, depression and enthusiasm, as well as a five-factor structure including the same four factors plus a second-order factor called global affective well-being (Gonçalves & Neves, 2011). IWP is a 6-point scale from 1 (”never”) to 6 (“all the time”) and revealed a good internal consistency (alphas .868 to .939).

5.3. Procedure and ethics

Data was collected between January and March, 2016. Participants completed a multi-section questionnaire survey distributed online using Google Forms. The hyperlink to the questionnaire survey was distributed via email, Facebook and through online forums. Included in this questionnaire were a brief demographics survey and self-report measures of FFMQ, DERS, PSS, and IWP. Participants first signed an informed consent form and then took about 15 minutes to complete all sections.

6. Findings

6.1. Data analysis

The first step was to perform the descriptive analysis (means and standard deviations) and next we analyzed inter-correlations between variables. The independent samples t-test was also performed to compare mindfulness, emotion regulation, perceived stress and well-being between individuals who had mindfulness training and those who had not and also between individuals who practice mindfulness meditation regularly and those who do not. Software SPSS 22.0 was used to perform all data analysis.

6.2. Descriptive statistics and correlation between variables

Means, standard deviations, and correlation matrix are presented in Table 1. We can observe that affective well-being (M = 4,278, SD =, 820), comfort (M = 3,805, SD = 1,001) and enthusiasm (M = 3,986, SD = 1,169), present higher scores when compared with depression (M = 1,822, SD =, 967) and anxiety (M = 2,857, SD =, 904). Stress level is very low (M = 1,464, SD =, 715), as well as the

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difficulties in emotion regulation. Mindfulness facets have intermediate values considering a five-point Likert scale.

Analyzing variables correlations (see Table 1) we can found positive and significant correlations between all mindfulness facets and comfort, enthusiasm and overall affective well-being, and negative associations between mindfulness facets and stress, anxiety and depression. Difficulties in emotion regulation showed a negative and significant correlation with comfort, enthusiasm and overall affective well-being and positive association with stress, anxiety and depression. Correlations between mindfulness facets and difficulties in emotion regulation dimensions are negative and statistically significant.

6.3. Independent samples t-test and descriptive statistics for mindfulness facets by previous training in mindfulness (with MT) and without previous training in mindfulness (without MT)

Participants were asked if they already had mindfulness training: 135 (52, 3%) answered no, and 123 (47, 7%) answered yes. So participants were divided in two groups: with previous mindfulness training (with MT) and without previous mindfulness training (without MT). An independent-samples t-test was performed to compare all variables in with previous mindfulness training (with MT) and in without previous mindfulness training (without MT). The independent sample t-test for mindfulness facets (Table 2) revealed that there is a significant difference in the scores for observing ($M_{without\ MT}$=3,233, $SD_{without\ MT}$=0,827, $M_{with\ MT}$=3,704, $SD_{with\ MT}$=0,723, t(247,070)= -5,205, p = 0.000), describing ($M_{without\ MT}$=3,452, $SD_{without\ MT}$=0,723, $M_{witht\ MT}$=3,763, $SD_{with\ MT}$=0,642, t(256)= -3,645, p = 0.000), non-judging ($M_{without\ MT}$=3,293, $SD_{without\ MT}$=0,807, $M_{witht\ MT}$=3,663, $SD_{with\ MT}$=0,794, t(256)= -3,706, p = 0.000) and non-reactivity ($M_{without\ MT}$=2,988, $SD_{without\ MT}$=0,633, $M_{witht\ MT}$=3,295, $SD_{with\ MT}$=0,573, t(256)= -4,066, p = 0.000). These results suggest that previous training in mindfulness really does have an effect on mindfulness facets. Specifically, our results suggest that when individuals have mindfulness training, observing, describing, non-judging, and non-reactivity dimensions increase.

Table 1. Descriptive statistics and correlations between variables

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	M	SD
1.	Observing	(,887)																	3,458	0,771
2.	Describing	,510**	(,889)																3,600	0,702
3.	Acting with awareness	,207**	,423**	(,905)															3,625	0,723
4.	Non-judging	,068	,345**	,473**	(,888)														3,469	0,821
5.	Non-reactivity	,629**	,511**	,232**	,141*	(,794)													3,135	0,623
6.	STRATEGIES[a]	-,381**	-,448**	-,409**	-,437**	-,491**	(,856)												1,777	0,713
7.	NON-ACCEPTANCE[a]	-,181**	-,342**	-,417**	-,595**	-,324**	,688**	(,923)											1,988	0,932
8.	AWARENESS[a]	-,595**	-,538**	-,319**	-,126*	-,484**	,312**	,138*	(,731)										2,512	0,640
9.	IMPULSE[a]	-,250**	-,397**	-,432**	-,464**	-,464**	,780**	,692**	,258**	(,853)									1,780	0,727
10.	GOALS[a]	-,333**	-,413**	-,517**	-,413**	-,441**	,716**	,641**	,269**	,745**	(,832)								2,190	0,810
11.	CLARITY[a]	-,433**	-,685**	-,552**	-,430**	-,462**	,609**	,534**	,615**	,564**	,525**	(,808)							1,971	0,697
12.	Perceived stress	-,407**	-,459**	-,477**	-,420**	-,563**	,681**	,560**	,452**	,648**	,592**	,588**	(,893)						1,464	0,715
13.	Anxiety	-,184**	-,307**	-,455**	-,414**	-,247**	,444**	,425**	,209**	,460**	,459**	,440**	,593**	(,868)					2,857	0,904
14.	Comfort	,390**	,356**	,337**	,254**	,377**	-,351**	-,301**	-,377**	-,340**	-,338**	-,417**	-,560**	-,595**	(,889)				3,805	1,001
15.	Depression	-,223**	-,286**	-,370**	-,384**	-,292**	,545**	,424**	,269**	,530**	,425**	,452**	,492**	,606**	-,455**	(,916)			1,822	0,967
16.	Enthusiasm	,344**	,329**	,358**	,192**	,412**	-,378**	-,313**	-,395**	-,337**	-,388**	-,375**	-,512**	-,412**	,679**	-,514**	(,939)		3,986	1,169
17.	Affective well-being	,358**	,395**	,465**	,373**	,416**	-,525**	-,445**	-,393**	-,506**	-,493**	-,515**	-,662**	-,783**	,845**	-,784**	,829**	(,926)	4,278	0,820

Note. [a]Limit access to emotion regulation strategies (STRATEGIES); Non-acceptance of emotional responses (NONACCEPTANCE); Lack of emotional awareness (AWARENESS); Impulse control difficulties (IMPULSE); Difficulties engaging in goal-directed behavior (GOALS); Lack of emotional clarity (CLARITY). (Diagonal)=(Alpha de Cronbach); * $p < .05$, ** $p < .01$.

Table 2. T-test results and descriptive statistics for mindfulness facets by previous mindfulness training

		N	M	SD	t-test	df	sig	Result
Observing	Without MT	135	3,233	0,827	-5,205	247,070	,000	Without mindfulness training < with mindfulness training
	With MT	123	3,704	0,620				
Describing	Without MT	135	3,452	0,723	-3,645	256	,000	Without mindfulness training < with mindfulness training
	With MT	123	3,763	0,642				
Acting with awareness	Without MT	135	3,569	0,789	-1,306	256	,193	n.s.
	With MT	123	3,687	0,641				
Non-judging	Without MT	135	3,293	0,807	-3,706	256	,000	Without mindfulness training < with mindfulness training
	With MT	123	3,663	0,794				
Non-reactivity	Without MT	135	2,988	0,633	-4,066	256	,000	Without mindfulness training < with mindfulness training
	With MT	123	3,295	0,573				

Note. M=Mean, SD=Standard deviation; df=degree of freedom; n.s. – no significant

Independent sample t-test for difficulties in emotion regulation (Table 3) revealed that there is a significant difference in scores for lack of emotional awareness (AWARENESS) ($M_{without\ MT}$=2,624, $SD_{without\ MT}$=0,934, $M_{witht\ MT}$=2,390, $SD_{with\ MT}$=0,555, t(256)= 2,967, p = 0.003) and lack of emotional clarity (CLARITY) ($M_{without\ MT}$=2,117, $SD_{without\ MT}$=0,713, $M_{witht\ MT}$=1,811, $SD_{with\ MT}$=0,644, t(256)= 3,599, p = 0.000). These results suggest that previous training in mindfulness really does have an effect on the lack of emotional awareness and lack of emotional clarity. Specifically, our results suggest that when individuals have mindfulness training, lack of emotional awareness and lack of emotional clarity decrease.

Table 3. T-test results and descriptive statistics for difficulties in emotion regulation by previous training in mindfulness

		N	M	SD	t-test	df	sig	Result
Limit access to emotion regulation strategies (STRATEGIES)	Without MT	135	1,833	0,705	1,341	256	,181	n.s.
	With MT	123	1,714	0,719				
Non-acceptance of emotional responses (NONACCEPTANCE)	Without MT	135	2,074	0,934	1,552	256	,122	n.s.
	With MT	123	1,894	0,924				
Lack of emotional awareness (AWARENESS)	Without MT	135	2,624	0,693	2,967	256	,003	Without mindfulness training > with mindfulness training
	With MT	123	2,390	0,555				
Impulse control difficulties (IMPULSE)	Without MT	135	1,798	0,740	,412	256	,681	n.s.
	With MT	123	1,760	0,714				
Difficulties engaging in goal-directed behavior (GOALS)	Without MT	135	2,242	0,833	1,072	256	,285	n.s.
	With MT	123	2,133	0,783				
Lack of emotional clarity (CLARITY)	Without MT	135	2,117	0,713	3,599	256	,000	Without mindfulness training> with mindfulness training
	With MT	123	1,811	0,644				

Note. M=Mean, SD=Standard deviation; df=degree of freedom; n.s. – no significant

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Independent sample t-test for psychological health (Table 4) revealed that there are significant differences in stress scores ($M_{without\ MT}$=1,582, $SD_{without\ MT}$=0,732, $M_{witht\ MT}$=1,335, $SD_{with\ MT}$=0,677, t(256)= 2,810, p = 0.005), suggesting that individuals without mindfulness training present higher stress levels when compared with individuals with mindfulness training. Also were found significant differences on comfort ($M_{without\ MT}$=3,649, $SD_{without\ MT}$=0,998, $M_{witht\ MT}$=3,976, $SD_{with\ MT}$=0,981, t(256)= -2,644, p = 0.009), enthusiasm ($M_{without\ MT}$=3,825, $SD_{without\ MT}$=1,134, $M_{witht\ MT}$=4,163, $SD_{with\ MT}$=1,187, t(256)= -2,338, p = 0.020), and overall affective well-being ($M_{without\ MT}$=4,178, $SD_{without\ MT}$=0,798, $M_{witht\ MT}$=4,388, $SD_{with\ MT}$=0,834, t(256)= -2,058, p = 0.041). These results suggest that previous training in mindfulness really does have an effect on positive emotions. Specifically, our results suggest that when individuals have mindfulness training, comfort, enthusiasm and affective well-being increase.

Table 4. T-test results and descriptive statistics for stress, anxiety, depression, comfort, enthusiasm and affective well-being by previous training in mindfulness

		N	M	SD	t-test	df	sig	Result
Stress	Without MT	135	1,582	0,732	2,810	256	,005	Without mindfulness training > with mindfulness training
	With MT	123	1,335	0,677				
Anxiety	Without MT	135	2,926	0,897	1,292	256	,198	n.s.
	With MT	123	2,781	0,910				
Comfort	Without MT	135	3,649	0,998	-2,644	256	,009	Without mindfulness training < with mindfulness training
	With MT	123	3,976	0,981				
Depression	Without MT	135	1,835	0,981	,223	256	,823	n.s.
	With MT	123	1,808	0,956				
Enthusiasm	Without MT	135	3,825	1,134	-2,338	256	,020	Without mindfulness training < with mindfulness training
	With MT	123	4,163	1,187				
Affective well-being	Without MT	135	4,178	0,798	-2,058	256	,041	Without mindfulness training < with mindfulness training
	With MT	123	4,388	0,834				

Note. M=Mean, SD=Standard deviation; df=degree of freedom; n.s. – no significant

6.4. Independent samples t-test and descriptive statistics for mindfulness facets by no practice of mindfulness meditation (No PracMind) and practice of mindfulness meditation (PracMind)

Participants were asked if they regularly practice mindfulness meditation: 154 (59, 7%) answered no and 104 (40, 3%) answered yes. So participants were divided in two groups: no practice of mindfulness meditation (*No PracMind*) and practice of mindfulness meditation (*PracMind*). An independent-samples t-test was performed to compare all variables in no practices regularly mindfulness meditation (*No PracMind*) and in practices regularly mindfulness meditation (*PracMind*). The independent-sample t-test for mindfulness facets (Table 5) revealed that there is a significant difference in scores for observing ($M_{No\ PracMind}$ =3,244, $SD_{No\ PracMind}$ =0,810, $M_{PracMind}$=3,775, $SD_{PracMind}$=0,582, t(254,994)= -6,135, p = 0.000), describing ($M_{No\ PracMind}$ =3,438, $SD_{No\ PracMind}$ =0,692, $M_{PracMind}$=3,840, $SD_{PracMind}$=0,648, t(256)= -4,694, p = 0.000), acting with awareness ($M_{No\ PracMind}$ =3,533, $SD_{No\ PracMind}$ =0,771, $M_{PracMind}$=3,762, $SD_{PracMind}$=0,624, t(247,774)= -2,623, p = 0.009), non-judging ($M_{No\ PracMind}$ =3,261, $SD_{No\ PracMind}$ =0,799, $M_{PracMind}$=3,778, $SD_{PracMind}$=0,624, t(256)= -6,135, p = 0.000), and non-reactivity ($M_{No\ PracMind}$ =2,969, $SD_{No\ PracMind}$ =0,604, $M_{PracMind}$=3,379, $SD_{PracMind}$=0,570, t(254,994)= -5,465, p = 0.000). These results suggest that the regular practice of mindfulness meditation does have an effect on mindfulness facets. Specifically, our results suggest that when

individuals regularly practice mindfulness meditation, observing, describing, acting with awareness, non-judging and non-reactivity scores increase.

Table 5. T-test results and descriptive statistics for mindfulness facets by regular practice of mindfulness meditation

		N	M	SD	t-test	df	sig	Result
Observing	No PracMind	154	3,244	0,810	-6,135	254,994	,000	Not practice of mindfulness < practice of mindfulness
	PracMind	104	3,775	0,582				
Describing	No PracMind	154	3,438	0,692	-4,694	256	,000	Not practice of mindfulness < practice of mindfulness
	PracMind	104	3,840	0,648				
Acting with awareness	No PracMind	154	3,533	0,771	-2,623	247,774	,009	Not practice of mindfulness < practice of mindfulness
	PracMind	104	3,762	0,624				
Nonjudging	No PracMind	154	3,261	0,799	-5,212	256	,000	Not practice of mindfulness < practice of mindfulness
	PracMind	104	3,778	0,756				
Nonreactivity	No PracMind	154	2,969	0,604	-5,465	256	,000	Not practice of mindfulness < practice of mindfulness
	PracMind	104	3,379	0,570				

Note. M=Mean, SD=Standard deviation; df=degree of freedom; n.s. – no significant

Independent sample t-test for difficulties in emotion regulation (Table 6) revealed that there is a significant difference in all dimensions: limit access to emotion regulation strategies (STRATEGIES) ($M_{No\ PracMind}$ =1,890, $SD_{No\ PracMind}$ =0,780, $M_{PracMind}$=1,608, $SD_{PracMind}$=0,562, t(254,865)= 3,377, p = 0.001), non-acceptance of emotional responses (NONACCEPTANCE) ($M_{No\ PracMind}$ =2,097, $SD_{No\ PracMind}$ =0,957, $M_{PracMind}$=1,827, $SD_{PracMind}$=0,874, t(256)= 2,306, p = 0.022), lack of emotional awareness (AWARENESS) ($M_{No\ PracMind}$ =2,633, $SD_{No\ PracMind}$ =0,691, $M_{PracMind}$=2,333, $SD_{PracMind}$=0,510, t(253,925)= 4,007, p = 0.000), impulse control difficulties (IMPULSE) ($M_{No\ PracMind}$ =1,859, $SD_{No\ PracMind}$ =0,777, $M_{PracMind}$=1,662, $SD_{PracMind}$=0,630, t(256)= 2,156, p = 0.032), difficulties engaging in goal-directed behavior (GOALS) ($M_{No\ PracMind}$ =2,310, $SD_{No\ PracMind}$ =0,841, $M_{PracMind}$=2,012, $SD_{PracMind}$=0,728, t(256)= 2,952, p = 0.003) and lack of emotional clarity (CLARITY) ($M_{No\ PracMind}$ =2,105, $SD_{No\ PracMind}$ =0,746, $M_{PracMind}$=1,773, $SD_{PracMind}$=0,566, t(252,487)= 4,061, p = 0.000). These results suggest that the regular practice of mindfulness meditation does have an effect in difficulties in emotion regulation. Specifically, results suggest that when individuals regularly practice mindfulness meditation, difficulties in emotion regulation decrease.

Table 6. T-test results and descriptive statistics for difficulties in emotion regulation by regular practice of mindfulness meditation

		N	M	SD	t-test	df	sig	Result
Limit access to emotion regulation strategies (STRATEGIES)	No PracMind	154	1,890	0,780	3,377	254,865	,001	Not practice of mindfulness > practice of mindfulness
	PracMind	104	1,608	0,562				
Non-acceptance of emotional responses (NONACCEPTANCE)	No PracMind	154	2,097	0,957	2,306	256	,022	Not practice of mindfulness > practice of mindfulness
	PracMind	104	1,827	0,874				
Lack of emotional awareness (AWARENESS)	No PracMind	154	2,633	0,691	4,007	253,925	,000	Not practice of mindfulness > practice of mindfulness
	PracMind	104	2,333	0,510				
Impulse control difficulties (IMPULSE)	No PracMind	154	1,859	0,777	2,156	256	,032	Not practice of mindfulness > practice of mindfulness
	PracMind	104	1,662	0,630				
Difficulties engaging in goal-directed behavior (GOALS)	No PracMind	154	2,310	0,841	2,952	256	,003	Not practice of mindfulness > practice of mindfulness
	PracMind	104	2,012	0,728				
Lack of emotional clarity (CLARITY)	No PracMind	154	2,105	0,746	4,061	252,487	,000	Not practice of mindfulness > practice of mindfulness
	PracMind	104	1,773	0,566				

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Note. M=Mean, SD=Standard deviation; df=degree of freedom; n.s. – no significant

Independent sample t-test for psychological health (Table 7) revealed that there is a significant difference in stress scores ($M_{No\ PracMind}$ =1,612, $SD_{No\ PracMind}$ =0,743, $M_{PracMind}$=1,246, $SD_{PracMind}$=0,613, t(256)= 4,151, p = 0.000), anxiety ($M_{No\ PracMind}$ =2,991, $SD_{No\ PracMind}$ =0,949, $M_{PracMind}$=2,657, $SD_{PracMind}$=0,797, t(256)= 2,956, p = 0.003), and depression ($M_{No\ PracMind}$ =1,939, $SD_{No\ PracMind}$ =1,056, $M_{PracMind}$=1,647, $SD_{PracMind}$ =0,791, t(253,252)= 2,535, p = 0.012). These results suggest that regular practice of mindfulness meditation does have an effect on stress, anxiety and depression. Specifically, our results suggest that when individuals regularly practice mindfulness meditation, stress, anxiety and depression decrease.

Also were found significant differences on comfort ($M_{No\ PracMind}$ =3,593, $SD_{No\ PracMind}$ =1,009, $M_{PracMind}$=4,119, $SD_{PracMind}$=0,907, t(256)= -4,272, p = 0.000), enthusiasm ($M_{No\ PracMind}$ =3,736, $SD_{No\ PracMind}$ =1,126, $M_{PracMind}$=4,356, $SD_{PracMind}$=1,139, t(256)= -4,317, p = 0.000) and overall affective well-being ($M_{No\ PracMind}$ =4,100, $SD_{No\ PracMind}$ =0,840, $M_{PracMind}$=4,542, $SD_{PracMind}$=0,716, t(256)= -4,403, p = 0.000). These results suggest that the regular practice of mindfulness meditation does have an effect on stress, anxiety and depression. Specifically, our results suggest that when individuals regularly practice mindfulness meditation, comfort, enthusiasm and affective well-being increase.

Table 7. T-test results and descriptive statistics for stress, anxiety, depression, comfort and affective well-being by regular practice of mindfulness meditation

		N	M	SD	t-test	df	sig	Result
Stress	No PracMind	154	1,612	0,743	4,151	256	,000	Not practice of mindfulness > practice of mindfulness
	PracMind	104	1,246	0,613				
Anxiety	No PracMind	154	2,991	0,949	2,956	256	,003	Not practice of mindfulness > practice of mindfulness
	PracMind	104	2,657	0,797				
Comfort	No PracMind	154	3,593	1,009	-4,272	256	,000	Not practice of mindfulness < practice of mindfulness
	PracMind	104	4,119	0,907				
Depression	No PracMind	154	1,939	1,056	2,535	253,252	,012	Not practice of mindfulness > practice of mindfulness
	PracMind	104	1,647	0,791				
Enthusiasm	No PracMind	154	3,736	1,126	-4,317	256	,000	Not practice of mindfulness < practice of mindfulness
	PracMind	104	4,356	1,139				
Affective well-being	No PracMind	154	4,100	0,840	-4,403	256	,000	Not practice of mindfulness < practice of mindfulness
	PracMind	104	4,542	0,716				

Note. M=Mean, SD=Standard deviation; df=degree of freedom; n.s. – no significant

7. Conclusions

Psychological health is one of the major concerns of modern societies. Correlational and experimental studies converge to suggest that mindfulness practices (non-reactivity to inner experience, observing sensations/thoughts/feelings, acting with awareness, describing/labeling with words and non-judging of experience) contribute to psychological health and well-being (Baer et al., 2006; Feldman, Hayes, Kumar, Greeson & Laurenceau, 2007; Gu, Strauss, Bond & Cavanagh, 2015; Hofmann, Sawyer, Witt & Oh, 2010; Klainin-Yobas, Cho & Creedy, 2012; Wenzel, Versen, Hirschmuller & Kubiak, 2015). Present study results also converge to the same direction giving us an important view of

the association between mindfulness facets, emotion regulation, perceived stress and well-being. Mindfulness training and mindfulness practice appear to have an effect on emotional regulation, psychological health, and well-being. The greater importance of this study is the fact that we could specifically understand the importance of mindfulness training and the importance of regular mindfulness meditation practice to the development of mindfulness facets. To our knowledge, this study is the first to estimate the relationships between these dimensions related to previous mindfulness training and regular mindfulness meditation practice. We point as limitations to our study the fact that, as most psychology researches, it is based on self-reported measures. Future research can examine whether these effects are moderated by individual goals or individual levels of distress. Future research can also examine these relationships in a longitudinal study related to a mindfulness training program. Our study supports the benefits of mindfulness training and, in a more expressive way, the importance of the regular practice of mindfulness meditation.

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