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Practitioner Report

Fostering Self-Compassion and Loving-Kindness in Patients With Borderline Personality Disorder: A Randomized Pilot Study

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The aim of this randomized pilot study is to investigate the effects of a short training programme in loving-kindness and compassion meditation (LKM/CM) in patients with borderline personality disorder. Patients were allocated to LKM/CM or mindfulness continuation training (control group). Patients in the LKM/CM group showed greater changes in Acceptance compared with the control group. Remarkable changes in borderline symptomatology, self-criticism and self-kindness were also observed in the LKM/CM group. Mechanistic explanations and therapeutic implications of the findings are discussed.

Highlights:

- Three weeks of loving-kindness and compassion meditations increased acceptance of the present-moment experience in patients with borderline personality disorder.
- Significant improvements in the severity of borderline symptoms, self-criticism, mindfulness, acceptance and self-kindness were observed after the LKM/CM intervention.
- LKM/CM is a promising complementary strategy for inclusion in mindfulness-based interventions and Dialectical Behavioural Therapy for treating core symptoms in borderline personality disorder.

Keywords: Borderline Personality Disorder, Loving-Kindness, Self-Compassion, Mindfulness, Acceptance

INTRODUCTION

Borderline Personality Disorder (BPD) is a serious and prevalent disorder characterized by a persistent pattern of impulsivity, unstable affect, interpersonal impairment and identity instability (Leichsenring *et al.*, 2011). According to biosocial theory (Linehan, 1993a), invalidating environments during childhood—such as those in which negligence, abandonment and emotional, physical or sexual abuse are present—may play a pivotal role in the later development of BPD. Such personal early traumatic experiences are often present in individuals with BPD (Martín-Blanco et al., 2014; McMain, Korman, & Dimeff, 2001) and may interfere with the proper development of a supportive self (i.e., self-compassionate) and emotional self-regulation skills, and also contribute to the development of a self-invalidating/self-critical cognitive style (Linehan, 1993a). Self-criticism is a transdiagnostic (Gilbert & Irons, 2005) and overrepresented trait in BPD populations (Leichsenring, 2011; Southwick, Yehuda, & Giller, 1995) and may greatly overlap with the construct of self-invalidation. One of the main focuses of Dialectical

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Behaviour Therapy (DBT; Linehan, 1993a)—the intervention with strongest base of evidence for the treatment of BPD (Stoffers *et al.*, 2012)—is to treat self-criticism/self-invalidation and their common secondary emotions such as shame and guilt. For this reason, DBT skills training includes several exercises (such as self-encouragement, contribution, half-smile and mindfulness with emotion) designed to enhance a more effective attitude of self-support, self-compassion and kindness (Linehan et al., 1993b).

Loving-kindness (LKM) and compassion meditations (CM) are Buddhism-derived practices aimed at developing affective positive states of kindness and a sincere sympathy for those stricken by misfortune together with a earnest wish to ease this suffering (Hopkins, 2001). Contemporary psychological interventions—such as the Mindfulness Self-Compassion programme (Neff, 2013), Compassion Focused Therapy (Gilbert & Procter, 2006), Cognitively-Based Compassion Training (Mascaro, Rilling, Negi, & Raison, 2013) or Compassion Cultivation Training (Jazaieri *et al.*, 2013)—seek to foster these same attributes. Mindfulness practices also promote increased self-compassion (Hofmann, Grossman & Hinton, 2011), which may then mediate part of the beneficial effects of mindfulness on some clinical symptoms (e.g., on depressive symptomatology; Kuyken *et al.*, 2010). Self-compassion is related to mental health and resilience (MacBeth & Gumley, 2012) and may act as a psychological buffer against psychological stressors (Gilbert, 2010a, 2010b).

There is a growing body of evidence that compassion-based interventions are effective strategies to promote mental wellbeing and to reduce clinical symptomatology in diverse clinical and non-clinical samples in the general population (Neff & Germer, 2013), in patients with high levels of self-criticism and shame (Gilbert & Procter, 2006), and in eating disorders (Gale, Gilbert, Read, & Goss, 2012), psychotic disorders (Braehler *et al.*, 2013; Mayhew & Gilbert, 2008), addictions (Kelly, Zuroff, Foa, & Gilbert, 2010), chronic personality disorders with self-critical thoughts (Lucre & Corten, 2013) and in populations with heterogeneous psychiatric conditions (Heriot-Maitland et al., 2014; Judge, Cleghorn, McEwan, & Gilbert, 2012).

To date, only two studies have been conducted to evaluate the effects of LKM and CM interventions in patients with personality disorders (BPD type not-specified; Judge *et al.*, 2012 and Lucre & Corten, 2012); however, no research has yet been conducted in patients with BPD as the primary diagnosis. Teaching LKM and CM to patients with BPD may be a coherent and complementary way to treat self-criticism and shame (see Hofmann *et al.*, 2011, and Leaviss & Uttley, 2015, for a review) and a valuable strategy to include in BPD interventions such as DBT. Indeed, the most recent DBT-skills training (DBT-ST) manual includes LK meditation as part of the mindfulness module (Linehan, 2014). The aim of the pilot study presented here is to investigate the effects of a 3-week intervention of LKM and CM on clinical severity, mindfulness skills (i.e., acceptance and awareness of the present moment), self-evaluation cognitive style and compassion in patients with BPD who previously attended a 10-week mindfulness training programme that has proven to be effective in improving clinical symptoms (e.g., Feliu-Soler *et al.*, 2014; Soler *et al.*, 2012). To assess the added value of LKM/CM in this sample, patients were randomly allocated to either 3 weeks of LKM/CM or mindfulness continuation training (MCT).

METHODS

Participants and Procedure

Thirty-two patients with a diagnosis of BPD according to DSM-IV-TR criteria and the structured interview DIB-R (Diagnostic Interview for Borderlines Revised; Barrachina *et al.*, 2004) were invited to participate in the present study. Participants ranged in age from 18 to 45 years, and included both male ($n = 2$) and female ($n = 30$) Caucasians. Exclusion criteria were as follows: diagnosis of drug-induced psychosis, organic brain syndrome, bipolar or psychotic disorder, or intellectual disability; or participation in any other psychotherapy treatment during the study. The mean baseline BPD symptom severity of participants was moderate-to-high (mean DIB-R score [standard deviation] = 7.58 [1.48]). The study was approved by the ethics committee of the Hospital de la Santa Creu i Sant Pau and carried out in accordance with the Declaration of Helsinki. Informed consent was obtained from all participants. All participants had been receiving outpatient psychiatric treatment at the time of study inclusion and had previously received mindfulness skills training (10 group sessions) in a DBT setting (for details, see Feliu-Soler *et al.*, 2014).

Since mindfulness training is commonly used in many Buddhist traditions as a preliminary phase to establish concentration, attention and self-investigative skills, all of which are required for LKM and CM, and since the effects of such techniques could be undermined if they are practiced without mindfulness (Hofmann et al., 2011), a major requirement for this study was previous mindfulness training. After 10 weeks of mindfulness training, participants were randomly allocated to receive three sessions (one per week) of either LKM/CM or MCT. Patients completed self-reported measures before and after these interventions. Psychiatric medication was unaltered during the 3-week study period, and none of the participants received any additional type of psychotherapy.

Interventions

Both interventions were group-based (six to eight people per group). The interventions were co-led by two clinical

psychologists (JS and AF) with long-term personal practice in mindfulness meditation and extensive clinical experience with mindfulness-based programmes and DBT.

The 3-week LKM/CM intervention (total of three sessions, delivered once weekly) included psychoeducational content from Gilbert's theoretical model of compassion (Gilbert, 2010a, 2010b) and Neff & Germer vision (Germer, 2009; Germer & Neff, 2013; Neff, 2011). The aim of this psychoeducational training was to establish motivation for LKM and CM practice, to differentiate self-compassion from self-indulgence and self-esteem and to provide an evolutionary understanding of compassion by explaining the three emotion regulation systems. Participants were also instructed in DBT techniques that based on the use of kindness and affection (i.e., half smile, willing hands, self encouragement, connectedness meditation and contribution skills; Linehan, 1993b). Other techniques extracted from other models were also taught, including affection in acceptance of negative emotions (compassion with difficult emotions; H nh, 1999), loving-kindess or *metta* meditation with significant others, acquaintances, enemies and oneself, using the support of phrases of kindness and images (Gilbert, 2010a), and specific exercises (i.e., 'Compassionate touch', 'Soften, soothe and allow', and 'Compassionate letter to myself') from the Mindful Self-Compassion programme (Germer, 2009; Neff, 2011). Importantly, throughout the LKM/CM intervention (similar to mindfulness teachings in DBT settings), we emphasized the importance of being effective through loving-kindness and compassion practice (i.e., by not using such strategies for experiential avoidance but rather for approaching reality in a more effective and balanced way). LKM and CM exercises were practiced during clinical sessions, and participants were strongly encouraged to do daily practice. Audio tapes with LKM and CM exercises were also provided for home practice. For more detailed information about the three sessions of the LKM/CM intervention, please see Soler *et al.* (2015).

Mindfulness practice is aimed at increasing attentional control and developing an open attitude of acceptance to all components (pleasant or unpleasant) of the experience as it is usually taught in mindfulness-based interventions (e.g., Kabat-Zinn, 1990). In a DBT context, mindfulness practice is also intended to balance 'emotional mind' with 'reasoning mind' in order to achieve a 'wiser' state, to act with a wider awareness, and to reduce mood-dependent and impulsive behaviours (Linehan, 1993a, 1993b). In the 3-week MCT, patients continued with the practices established during the prior 10 weeks. Two different sets of mindfulness skills are taught during mindfulness training: 'what' skills and 'how' skills (Linehan, 1993b). 'What' skills are (1) observing (i.e., noticing the current experience), (2) describing (i.e., applying verbal labels to what one has observed) and (3) to fully participate in their actions in the present moment and without self-consciousness. 'How' skills indicate how to do the 'what skills'; thus, observing, describing and participating skills should be executed (1) in a non-judgmental manner, (2) focused on one thing at a time and (3) aimed at being effective (Linehan, 1993b). In addition, some mindfulness skills from the Distress Tolerance module (such as 'Observing the breath' and 'Awareness' exercises) and basic principles of accepting reality ('Radical acceptance', 'Turning the mind' and 'Willingness over Willfulness') were also practiced throughout 10-week mindfulness training and during the MCT. Regular home mindfulness practice was reinforced by the therapists, and patients also practiced during clinical sessions, as occurs in all DBT-skill-training modules. Additional audio listenings extracted from DBT mindfulness CDs (www.behavioraltech.org) with mindfulness exercises focused on increasing awareness of breathing, emotions, thoughts and sensations were also included in the 3-week MCT in order to maintain the perception of novelty in the intervention.

Instruments

Diagnostic Interview for Borderlines Revised (DIB-R; Barrachina *et al.*, 2004; Zanarini, Gunderson, Franken-burg, & Chauncey, 1989) showed good psychometric properties with an internal reliability of 0.89 for DIB-R (Barrachina *et al.*, 2004) and was used to establish a BPD diagnosis. The DIB-R total score ranges between 0 and 10, establishing a BPD diagnosis at a cut-off of 6 for the Spanish version of the instrument.

Borderline Symptom List-23 (BSL-23; Bohus *et al.*, 2009; Soler *et al.*, 2013): Borderline severity was measured through the Borderline Symptoms List—23 (Bohus *et al.*, 2009; Soler *et al.*, 2013), in which patients rate each item on a 5-point Likert scale from 0 (not at all) to 4 (very strong). Cronbach's alpha for this scale is very high (0.95).

Self-Compassion Scale (SCS; Neff, 2003; García-Campayo et al., 2014) is a 26-item scale designed to assess overall self-compassion on a Likert scale from 1 (almost never) to 5 (almost always). It distinguishes three conceptual facets of compassion: Common humanity, Mindfulness and Self-kindness. The Spanish version of the scale has been shown to have good reliability (Cronbach's α values ranging from 0.72 to 0.79).

Forms of Self-Criticism/Self-Attacking and Self-Reassuring Scale (FSCRS; Gilbert *et al.*, 2004): This scale assesses forms and styles of patients' critical and reassuring self-evaluative responses to a setback or disappointment. It includes 22 items which measure self-critical and self-reassuring responses to adverse contexts on a five point Likert scale (from 0 = not at all like me to 4 = extremely like me). The Self-critical subscale includes two separate sub-factors, one focusing on feeling inadequate (Inadequate-self) and another which focuses on a sense

of disgust with the self (Hated-self), with Cronbach's alphas of 0.90 and 0.86, respectively.

Philadelphia Mindfulness Scale (PHLMS; Cardaciotto *et al.*, 2008; Tejedor *et al.*, 2014) is a 20-item questionnaire with a Likert scale ranging from 1 (never) to 5 (very often) for assessing two main facets of mindfulness: Present-moment awareness and Acceptance. Acceptance is understood to be an attitude of openness to the reality of the present moment, 'letting go judgments, interpretations, and/or elaborations of internal events, and making no attempt to change, avoid, or escape from the internal experiences' (Cardaciotto *et al.*, 2008). The Spanish version of the PHLMS presents good reliability, with Cronbach alphas for each subscale of 0.81 and 0.86, respectively.

Data Analyses

All analyses were performed with PASW 21.0 statistics pack. Chi-square and Student's *t*-tests were used for baseline analyses. Main analyses were based on an Intention-to-treat basis, and repeated measures ANOVA was used (treatment as between-subjects factor) and time (pre-and post-intervention as within-subjects factor) to analyze the following variables: (1) Borderline symptom severity, (2) Self-Criticism/Self-Attacking and Self-Reassuring evaluation styles, (3) Compassion facets and (4) Present-awareness and Acceptance. Missing data were treated with the last-observation-carried forward method. Paired *t*-tests were used for within-group analyses, and effect sizes with Cohen's *d*s were reported for each group.

RESULTS

Sociodemographic and Clinical Data

No significant differences between groups were found either for sociodemographic factors, clinical severity or attendance to intervention sessions (see Table 1 for details). No significant between-group differences for any baseline variables were observed (all $p > 0.38$).

Borderline Symptom Severity

No group × time effect was observed for BSL-23 scores (see Table 2). A significant pre-post change in borderline severity was observed in the within group analysis in the LKM/CM group ($t = 2.403$; $df = 13$; $p = 0.032$; $d = 0.64$). No significant changes in BSL-23 scores were found in the MCT condition.

Compassion Facets

Both groups showed similar improvements in all compassion facets (all $p > 0.05$). A tendency of time × group ($F(1,30) = 2.60$; $p = 0.117$; $\eta^2 = 0.080$) was observed for Self-kindness, where patients allocated to the LKM/CM condition scored somewhat higher than the control group. Within-group analyses showed significant pre-post changes (except for Common humanity subscale) with large to moderate effects sizes on these variables in the LKM/CM group (with Cohen's *d*s ranging from = −0.32 to = −0.90), and non-significant pre-post changes in the MCT group (from $d = -0.27$ to -0.37).

Self-Criticism and Self-Reassurance

No group × time effect was observed regarding Inadequate-self and Hated-self (i.e., Self-criticism) and Self-reassuring forms ($p > 0.05$). Both groups showed significant pre-post changes with moderate to strong effect sizes (with *d*s ranging from 0.52 to 0.65) in Inadequate-self and Hated-self scores. Self-reassurance did not significantly change in either group. For more details, please see Table 2.

Present-Moment Awareness and Acceptance

Increases in Present-moment awareness were similar between groups. However, a significant group × time interaction was found for Acceptance [$F(1,30) = 1{,}380$; $p = 0.016$; $\eta^2 = 0.18$]. Paired *t*-test (intra-group) analyses

Table 1. Sociodemographics and clinical data for LKM/CM and MCT groups.

	LKM/CM group ($n = 16$)	MCT group ($n = 16$)	*p*
Age	35.13 (8.25)	32.50 (6.17)	*n.s.*
Women	16/16	14/16	*n.s.*
Without a stable partner	12/16	13/16	*n.s.*
With a sick-leave	5/16	7/16	*n.s.*
Years of scholarship	11.87 (3.38)	12.37 (3.36)	*n.s.*
DIB-R score	7.60 (1.40)	7.56 (1.55)	*n.s.*
Number of sessions attended (3 = maximum)	2.44 (0.73)	1.94 (0.85)	*n.s.*

Note: Means with standard deviation (SD) or number of cases per each group are represented. LKM/CM = 3-week Loving-Kindness meditation/Compassion meditation intervention. MCT = 3-week Mindfulness Continuation Training. DIB-R = Diagnostic Interview for Borderlines Revised.

Table 2. Variables of the study pre and post the 3-week interventions

	LKM/CM group ($n = 16$)				MCT group ($n = 16$)					
	Pre	Post	*t*-value (*df*)	*p* Cohen's	Pre	Post	*t*-value (*df*)	*p* Cohen's *d*	ANOVA *p*	η^2
BSL-23	1.54 (1.05)	1.39 (1.02)	2.403 (13)	$p = 0.032$ $d = 0.64$	1.52 (0.92)	1.35 (1.00)	1.298 (15)	*n.s.* $d = 0.32$	*n.s.*	0.002
Inadequate-self-FSCRS	26.56 (7.03)	23.25 (9.77)	2.594 (15)	$p = 0.020$ $d = 0.65$	24.56 (7.54)	22.12 (7.02)	2.085 (15)	$p = 0.055$ d = 0.52	*n.s.*	0.008
Hated-self-FSCRS	9.44 (5.62)	8.18 (5.37)	2.565 (15)	$p = 0.022$ $d = 0.64$	10.12 (5.59)	8.00 (5.50)	2.377 (15)	$p = 0.031$ $d = 0.59$	*n.s.*	0.024
Self-reassuring-FSCRS	14.50 (5.12)	15.87 (5.48)	−1.478 (15)	*n.s.* $d = -0.37$	12.94 (6.21)	14.12 (6.08)	−1.245 (15)	*n.s.* $d = -0.31$	*n.s.*	0.001
Common humanity-SCS	4.34 (1.54)	4.67 (1.76)	−1.277 (15)	*n.s.* $d = -0.32$	4.17 (1.33)	4.52 (1.78)	−1.464 (15)	*n.s.* $d = -0.37$	*n.s.*	0.000
Mindfulness-SCS	3.66 (1.47)	4.25 (1.55)	−2.967 (15)	$p = 0.010$ $d = -0.74$	4.14 (1.65)	4.34 (1.60)	−1.094 (15)	*n.s.* $d = -0.27$	*n.s.*	0.064
Self-kindness-SCS	4.14 (1.54)	4.92 (1.64)	−3.589 (15)	$p = 0.003$ $d = -0.90$	4.64 (1.68)	4.94 (1.82)	−1.447 (15)	*n.s.* $d = -0.36$	*n.s.*	0.080
Present-moment awareness-PHLMS	36.44 (5.25)	36.62 (5.51)	−0.312 (15)	*n.s* $d = -0.08$	35.60 (7.10)	36.80 (7.11)	−1.535 (14)	*n.s.* $d = -0.38$	*n.s.*	0.036
Acceptance-PHLMS	25.12 (6.89)	27.31 (6.18)	−0.2659 (15)	$p = 0.018$ $d = -0.66$	26.25 (4.58)	25.44 (4.91)	.976 (15)	*n.s.* $d = 0.24$	$F(1,30) = 6.568$ $p = 0.016$	0.180

Note: Mean and standard deviation (SD) are represented. Interaction group × time effects are shown. Partial eta squared for interaction effects are also shown. Paired *t*-test was used to evaluate time effect within groups. Cohen's *d* for paired *t*-tests within groups are represented and partial eta square effect sizes (time × group) are also provided. LKM/CM = 3-week Loving-Kindness meditation/Compassion meditation intervention. MCT = 3-week Mindfulness Continuation Training. BSL-23 = Borderline Symptom List-23; FSCRS = Forms of Self-Criticism/Self-Attacking and Self-Reassuring Scale; SCS = Self-Compassion Scale; PHLMS = Philadelphia Mindfulness Scale.

showed significant improvements in the LKM/CM condition regarding Acceptance scores ($p = 0.018$; $d = -0.66$) whereas scores in the MCT condition did not change significantly (*n.s.*, $d = 0.24$).

DISCUSSION

This is the first study to evaluate the effects of LKM and CM techniques in patients with BPD as a primary diagnosis. Our preliminary findings suggest that a 3-week training programme in LKM/CM administered after 10 weeks of mindfulness training is superior to continuing mindfulness practice (MCT) in promoting Acceptance of the present experience in patients with BPD. Although no between-group differences were observed in changes on other outcome variables, significant pre-post changes with moderate-to-large effect sizes were found in favour of LKM/CM for BPD severity, Self-criticism, Mindfulness, Self-kindness and Acceptance. Significant pre-post decreases in Self-criticism (with a moderate effect size) were also observed for MCT.

Acceptance is understood to mean 'experientially open to the reality of the present moment' (Roemer & Orsillo, 2002), and our results suggest that loving-kindness and compassion training may be a good complement to mindfulness practice to promote this capacity. Interestingly, Acceptance as a concept (Hayes, Strosahl, & Wilson, 2011) and, specifically, as it is measured in the PHLMS (Bergomi, Tschacher, and Kupper, 2013), could be considered the opposite of experiential avoidance (EA), a fact that underscores the potential clinical relevance of strengthening Acceptance to treat BPD (Berking, Neacsiu, Comtois, & Linehan, 2009; Chapman, Dixon-Gordon, & Walters., 2011). EA is an unwillingness to be in contact with unpleasant private experiences (e.g., thoughts, memories, bodily sensations and emotions), which is expressed through attempts to avoid or escape from them (Hayes *et al.*, 1996). EA is one of the main clinical targets in DBT (Linehan, 1993a). In this regard, many of the severe behavioural patterns observed in BPD (e.g., self-mutilation, suicidal behaviours, drug abuse etc.) can be conceptualized as expressions of EA (Chapman, Dixon-Gordon, & Walters, 2011), which are maladaptive emotional strategies that may be effective in reducing negative emotions in the short-term, but that can lead to long-term increases in psychopathology and chronification (Sloan, 2004). Furthermore, high EA in BPD has been associated with clinical severity (Chapman *et al.*, 2011), less amelioration of depressive symptoms (Berking *et al.*, 2009), higher dropouts in DBT settings (Rüsch *et al.*, 2008) and to a lack of positive emotions (Jacob, Ower, & Buchholz, 2013). Consequently, this suggests that the presence of elevated levels of EA is likely to negatively affect the prognosis of patients with BPD.

Compassion and Acceptance can be related (Linehan, 2014). Although self-compassion is not directly aimed at targeting acceptance, an attitude of acceptance towards the present moment is required in the LKM and CM practices (Neff, 2011; Neff & Tirch, 2013); in this sense, for Linehan (p.462, Linehan, 2014), 'compassion is easier when we accept'. At the same time, a self-compassionate attitude seems to be also implicit to acceptance (Cardaciotto *et al.*, 2008) and, for some other authors (e.g., Germer, 2009), compassion is indeed a form of acceptance. The greater improvements (compared with MCT) observed in Acceptance after LKM/CM training are even more remarkable if we consider that mindfulness training itself places a great emphasis on accepting the present experience, regardless of whether the experience is pleasant, unpleasant or neutral (Kabat-Zinn, 1990). Positive emotions such as love for others and for oneself and self-compassion are actively *generated* in LKM and CM practices by means of visualizations and by promoting a deeper understanding of common humanity (Neff, 2003). Crucially, such training is not present (or at least not directly emphasized) in mindfulness exercises, which are *contemplative* practices. In this regard, LKM and CM, by explicitly fostering self-supportive skills, may help to improve emotional regulation, which may in turn also promote increases in Acceptance and decreases in EA (Chapman *et al.*, 2011). Since LKM and CM are aimed at developing a kind and respectful perspective towards others and oneself (e.g., 'May I to be happy, may I to be free of suffering') irrespective of the circumstances (Neff, 2003), it seems reasonable that, due to this training, self-critical thoughts and negative personal experiences may have a lesser emotional impact and be easier to accept. In agreement with this idea, Neff (2011) stated that feeling love and having the desire to take care of oneself are psychological states that are incompatible with judgement and nonacceptance. Furthermore, feeling positive affect for others and for oneself may promote action tendencies that can be considered to be the opposite of anger and being judgmental (Linehan, 2014), thus facilitating a kind of openness to the present experience (i.e., Acceptance). It is noteworthy that the explicit rationale for LKM/CM practices in this 3-week intervention was to increase personal effectiveness (in line with DBT-ST goals) by reducing self-invalidation/self-criticism and by improving skills to assist oneself in moments of suffering (differentiating it from self-indulgence/EA). In this regard, increases in Acceptance of the present experience suggest that LKM/CM practices may, at least, pave the way for increasing personal effectiveness. The trend observed in this study towards greater improvements in borderline symptom severity in the within-group analysis for LKM/CM also supports this line of thought.

On the pre-post analysis, patients allocated to the LKM/CM intervention showed reductions in borderline

symptom severity and Self-criticism and increases in Self-kindness. Patients allocated to the MCT condition presented improvements in Self-criticism. Improvements in self-criticism and self-reassurance (together with increased Acceptance and Mindfulness) may facilitate a more adaptive cognitive processing (e.g., thought suppression, rumination), which have been postulated as facilitators of the emotional escalation inherent to BPD (Selby & Joiner, 2009). More research is needed to elucidate whether, as suggested by Gilbert et al. (2010b), decreases in self-criticism and increases in self-kindness also reduce the risk of self-injury and suicidal behaviour in BPD populations. In addition, other studies conducted in clinical or preclinical populations (MacBeth & Gumley, 2012; Shapira & Mongrain, 2010) have suggested that increases in mental wellbeing and happiness may be achieved by fostering self-kindness and self-compassion. As BPD patients tend to present diminished levels of positive emotions (Elices *et al.*, 2012; Jacob *et al.*, 2013), it is especially important to identify pathways to enhance positive-related states.

With regards MCT, we believe that a ceiling effect may explain the modest positive changes observed in patients allocated to this group. After 10 weeks of contemplative work (i.e., mindfulness training), it appears that changes on the various facets of mindfulness will have already occurred so that the addition of three MCT sessions does not provide any substantial, additional improvements on this area. Furthermore, and as suggested in a previous study carried out by our group (Soler *et al.*, 2014), it seems that the amount of mindfulness practice (i.e., frequency of mindfulness sessions per month and lifetime practice) is only weakly correlated with increases in the Acceptance component (assessed by means of the Non-judging facet from the Five Facets Mindfulness Questionnaire), and this may partially explain the limited improvements observed in the MCT group.

It is also important to note that this is a pilot study with a relatively modest sample size. For this reason, our results should be interpreted with caution. Similarly, CM and LKM techniques may not be appropriate for all BPD patients in all clinical settings given the possibility that difficult emotions may arise when experimenting positive emotions (e.g., Gilbert, McEwan, Matos, & Rivis, 2011). For this reason, some high risk patients (i.e., those with self-injurious behaviour or other life-threatening behaviours) may also require previous instruction in distress tolerance skills. The limited size of the sample (and also limited statistical power) constitutes the main limitation of the study (especially in the comparison between treatment conditions). As a result, the lack of significant findings between treatments cannot be interpreted to mean that the intervention had no impact. Further studies with larger samples may help to clarify the validity of our findings. Given the study design (all subjects had received 10 weeks of mindfulness training prior to randomization), we cannot rule out the effect of this previous training on the outcomes, a limitation that restricts the generalizability of our findings. Clearly, future research should also evaluate the effect of LKM/CM on patients with BPD in settings without such extensive previous mindfulness training. However, the fact that all patients—in both study groups—had already received this mindfulness training, which has been proven highly effective in previous studies (Feliu-Soler *et al.*, 2014; Soler *et al.*, 2012), and that a rigorous control group (i.e., continuing mindfulness practice) was used, make the observed improvements in the LKM/CM group even more promising. To better determine the clinical contributions of this approach, DBT-ST enriched with LKM/CM techniques should also be compared with standard DBT-ST in further studies. Finally, the impact of LKM/CM on other variables (such as positive emotions or general well-being) and follow-up assessments for evaluating the long-term effects of LKM and CM practices should be also included in future research.

Teaching LKM/CM to patients with BPD seems to be an effective strategy for fostering Acceptance. In addition, compared with baseline measures, LKM/CM also shows a promising trend towards improving borderline symptoms, mindfulness facets and self-relational cognitive style. Such Buddhism-derived practices may offer a complementary therapeutic approach to treating BPD, and these could easily be added to mindfulness-based interventions and third-wave cognitive-behavioural interventions such as DBT.

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