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Metacognitive Interpersonal Mindfulness-Based Training For Worry About Interpersonal Events: A Pilot Feasibility And Acceptability Study

Abstract

Individuals with Personality Disorders worry and experience repetitive thoughts about interpersonal scenarios. The mainstream mindfulness approaches may be insufficient to soothe their distress as they struggle to let thoughts go and refocus attention to the present moment. For this reason, we devised an adapted form of mindfulness-based program called Metacognitive Interpersonal Mindfulness-Based Training (MIMBT) for Personality Disorders. In this pilot study 28 individuals attended nine weekly sessions to evaluate feasibility, acceptability and to establish preliminary outcomes. All individuals completed the program. Attendance was very high (96%). Significant changes were observed on the primary outcome of reduction in repetitive thinking as measured with the Metacognition Questionnaire (MCQ-30). We also observed a decrease in depression.

Despite important limitations, this pilot study suggests that MIMBT has potential to be a viable and well-accepted option for increasing positive outcomes in the treatment of Personality Disorders. Clinical considerations and directions for future research are discussed.

Keywords: Mindfulness, Personality Disorders, Metacognition.

Introduction

Many individuals suffer because they think and feel their relationships are frustrating or disappointing so they will fail to meet basic wishes and needs. Suffering comes not only from ideas about the state of relationships, but also from their worrying about interpersonal events. We refer to worry here in a large sense, that is any kind of problematic repetitive thinking (Segerstrom, 2000; Watkins, 2008), for example rumination (Nolen-Hoeksema, 2008) and forms of concerns about intrusions of negative thoughts (Wells, 2011).

These individuals focus their attention on selected relational episodes or to wider areas of their social life and engage themselves in endless cycles of worry and other forms of repetitive thinking. For example they spend time thinking about having being cheated, humiliated, having damaged the others and therefore feeling guilty and deserving punishement and so forth. They also focus their repetitive thinking on how to deal with the problem, how best to react: submit, counterattack, avoid and so on. As a result of this neverending process, they end up acting problematic behaviors such as avoidance, aggression or submissiveness (Ottavi et al., 2016). Subjective suffering and distress, for example in the forms of anxiety, depression, anger and somatic diseases is a consequence of this process (Brosschot et al., 2005)

These individuals whose repetitive thinking are often diagnosed with personality disorders (PDs).. For example, individuals with interpersonal dependency or dependent PD experience chronic fear of social evaluation and adopt reassurance seeking behavior which in the long term increases the likelihood that others judge them negatively (confirming their fears), and eventually abandon them (Bornstein, 1996; Dimaggio et al., 2007; McClintock and Mccarrick, 2017); 4) and under stressful situations become prone to emotional dysregulation (Dimaggio et al., 2017a).

Repetitive thinking in symptom disorders is typically a target of mindfulness programs (Snippe et al., 2015) and mindfulness appear to be successful in reducing tendencies to resort to such a cognitive process and therefore reduce suffering (Heeren and Philippot, 2011). Nevertheless, persons whose focus of worry and other forms of repetitive thinking may not fully benefit from standard mindfulness programs. Individuals with concerns about interpersonal relationships may have difficulties forming and sustaining a therapeutic alliance, to the point of inhibiting trust in the mindfulness instructor and practicing meditation as needed. Therapists in turn may have tendencies to negatively react to the point that ruptures in the alliance are not repaired (Bender, 2005).

Moreover, when individuals are worried about interpersonal scenarios, this may limit the extent to which they can benefit from generic mindfulness practice. These individuals can learn to recognize when they are prey of disrupting affects or that they are worrying, but may lose the capacity to do so when their mind is caught in repetitive thinking about the interpersonal scenarios they fear (Ottavi et al., 2016). We may imagine a young man fearing social judgment. When having to face an exam or a first romantic rendezvous he is prone to worry and anxiety at the idea of being scorned or rejected. He may have some mindfulness capacity which reduces momentary distress, but if he is unaware he is distress because he is applying a specific interpersonal schema, it is likely that benefits will not stay. Similar processes are present in people who are afraid of being humiliated and as a consequence are prone to reactive aggression and anger (Velotti et al., 2016). Meditation can help soothe transient state of anger but again without awareness that aggressive tendencies are one's own features and that they serve against instruments to cope with underlying feelings of vulnerability, inferiority and shame. It is therefore unlikely that benefits will be significant or sustainable. In this vein, some authors have started to develop mindfulness programs that are adapted to interpersonal problems (McClintock and Anderson, 2013).

Another problem is that many individuals with prominent interpersonal problems, also have problems in recognizing their affects, naming them and communicating to others (Nicolò et al., 2011). Poor affect awareness may hinder the capacity to use mindfulness to soothe distress, as it is difficult to meditate upon something one is not fully aware of. One may contend that a first goal of mindfulness is promoting awareness of inner states, but if individuals that have difficulties identifying whether they are angry, sad, ashamed or anxious or even label emotional states such as:

"tension", "distress", "unease", "nervousness", then they may struggle to attain a highly developed capacity to name affects and then soothe them.

These concerns led us to develop an adaptation of mindfulness program tailored to individuals whose main concerns are with interpersonal relationships. The program is based on the principles of Metacognitive Interpersonal Therapy for PD (MIT; Dimaggio et al., 2007; 2015). MIT is based on the premise that individuals are guided by maladaptive schemas for self and others. Based on these schemas we predict that individuals' basic evolutionarily shaped motives, such as attachment, social rank, exploration, group inclusion and so on (Liotti and Gilbert, 2011) will remain unmet. MIT also considers that these individuals have poor metacognition, that is diminished capacity to recognize mental states both in themselves and in the others; and deficits in using this knowledge for soothing distress and solving interpersonal problems (Dimaggio et al., 2007). Maladaptive coping strategies and dysfunctional emotion regulation are also MIT treatment targets (Ottavi et al., 2016).

We developed Metacognitive Interpersonal Based Mindfulness Training (MIMBT; Ottavi et al., 2016) against such a background, with a view to dealing with the symptoms and problems presented by individuals whose concerns are of interpersonal nature. We considered that MIMBT could be beneficial in persons with interpersonal repetitive thinking for a series of reasons. First evidence is mounting that in general mindfulness programs reduce repetitive thinking (Desrosiers et al., 2013; Shahar et al., 2010). Then, mindful meditation is significantly correlated with variables related to social behavior: helps identifying emotions relevant for social behaviors, increases empathy and reduces social anxiety (Dekeyser et al, 2008; Pratscher et al, 2017). Finally, mindfulness promote metacognitive functioning in particular awareness of own thought processes (Hussain, 2015), which in turns allow for adopting more adaptive mastery strategies when one is prey to repetitive thinking (Ottavi et al., 2016).

Other influences that led to the construction of the MIMBT were Metacognitive Therapy (Wells, 2011), standard mindfulness programs (Segal et al., 2002), Compassion Focused Therapy (Gilbert, 2010) and Acceptance and Commitment Therapy (Hayes et al., 1999). MIMBT shares in common with these approaches an attention to how patients respond to their ideas and help them first taking distance from these thoughts and then diverting attention to them so not to further feed them.

The key difference is that MIMBT is grounded around the rationale of the manualized form of Metacognitive Interpersonal Therapy (Dimaggio et al., 2015) which includes: 1) a precise assessment of maladaptive interpersonal schemas (Dimaggio et al., 2015) and b) is built around a structured model of metacognition (Lysaker et al., 2005; Semerari et al., 2003; 2007). Clients are guided to frame their awareness of maladaptive schemas so to understand they have specific wishes of interpersonal nature. These wishes are sustained but underlying core self-images, mostly negative, but with the presence of healthy aspects. As an example, a person has the wish to be valued and is guided by a dominant self-image as unworthy with the image of self as worthy only appearing shortly in the space of consciousness. Then persons have predictions about how others will react to their request that their wish is fulfilled. Continuing the example, they hope they will be appreciated but fears or are convinced the other will despise them. As we describe more in details, MIMBT requires a certain metacognitive awareness of the existence of such those interpersonal schemas. This awareness needs to be present at least in a nascent form: e.g. being able to to say something like: "I realize that it is not just that I am a failure and others laugh at me because of this, but when I'm outside this room I forget it and become prone to feeling inept and ashamed"

Metacognitive Interpersonal Mindfulness Based Training

In order to achieve mastery over clients' interpersonal repetitive thining, participants are briefed by their treating clinician or during a preliminary individual session that the goal of the program will be becoming more aware of their tendencies to ruminate on the state of their relationships and then to learn how to let these thoughts fade away. The first 4 sessions are devoted to learn and practice general aspects of mindfulness protocol, although participants are aware this is

just preliminary to detaching from their repetitive thoughts about interpersonal events. From session 5 onward, these patterns take the center of the attention.

MIMBT therefore begins with standard meditation, similar to MBSR (Kabat-Zinn, 1990) and MBCT (Segal et al., 2002). Then meditations are focused on the interpersonal aspects of emotional distress. The aims is for individuals to discover that the problems to which they dedicate time and mental energy when ruminating are for the most part the result of their schema-driven appraisals of interpersonal relationships. This is first obtained via a formulation of the most dominant interpersonal patterns, completed with the individual therapist. Then, individuals learn to recognize the activation of the schema in their everyday life and meditate in order to detach themselves from their firmly held beliefs and their painful emotional experiences.

In order to deal with problems involving self-awareness and agency, we first made the following modifications to the standard mindfulness protocols: 1) more time was dedicated during sessions to the inquiry process, in order to increase affect awareness and make meditation at home easier. In cooperation with the individual therapist the mindfulness instructor tried to help individuals describe, as best as they could, their inner states, what triggers them and the consequences of their affects; 2) meditations were briefer, maximum 15/20 minutes; 3) c*ommutation exercises were often used.* These consists in making individuals aware that they could purposefully shift their mind set between two modes of cognitive processing: the "doing mode" and the "being mode (Segal, et al., 2002). The "doing mode" refers to an ordinary state of mind where mental events are experienced as facts. The "being mode" is a state where our mind considers thoughts and emotions to be inner events. Individuals could, for example, be asked to voluntarily put aside every thought they have at that moment and, for a few seconds, focus on a part of their body, without actually meditating. Learning to shift between the two modes allows individuals to more clearly grasp the representational nature of their thoughts and become aware that repetitive thinking can be abandoned with a certain mental effort; 4) more emphasis was placed on informal rather than formal meditation practice at home. Instructors are flexible about homeworks, in order to avoid triggering problems with authority. The instructor assigned homework as short and easy exercises emphasizing the value of observing and carefully recording any difficulties experienced in meditating; 5) meditations included a focus on the interpersonal aspects of emotional distress. Individuals needed to discover that the problems to which ruminated on were for the most part the result of their schema-driven appraisals of interpersonal relationships. As we stated above, this started in individual sessions (Dimaggio et al., 2012; 2015; 2017b) and was then followed up between sessions 5 and 6 of MIMBT with a half-hour individual session with one of the two instructors.

The therapist helps individuals in refining their reconstructions of their interpersonal schemas, or retracing those performed in individual psychotherapy. This formulation became the focus of the meditations in the final sessions.

Aims of the present study

In this study we aimed at evaluating if a treatment for patients with prominent repetitive thinking about interpersonal relationships would be feasibile and accepted, , as assessed by drop-out rates and by rate of attendance to sessions. As regard clinical problems, primary outcome was reduction of worry. Secondary outcomes were reductions in depression and maladaptive representations of interpersonal relationships. We also assessed whether putative mechanisms of change, that is emotional awareness and regulation, improved.

Methods

Participants.

Individuals (n=28; 11 Male, 17 Female, all Caucasian) undergoing individual MIT for PD were included in two consecutive MIMBTs. All individuals completed the program and provided outcome data. The mean age was 42.2 years (*SD* 13.43) with a range from 20 to 67. Three

participants (10.7%) had not completed a high school education, five (17.8%) were high school graduates and twenty (71.5%) had some college education. Eleven were single (39.3%), and seventeen (60.7%) were married. Twenty-five participants (89.3%) were employed (see Table 1).

To be eligible for referral, individuals had to have actual prominent interpersonal problems.. We evaluated that having scores above 60 on at least one scale of the Millon Clinical Multiaxial Inventory- III (MCMI-III, Millon, 2006), which indicates possibly problematic personality styles (Halfaker et al., 2011).

TABLE 1 ABOUT HERE

All participants reported an annual household of income of less than $35,000. Individuals gave written informed consent after having read a detailed description of the program and the study. The program was paid for by the individuals themselves. Individuals were referred by their individual therapist be them one of the MIMBT instructors, or another therapist applying MIT. Treatment was delivered in a private outpatient center specializing in psychotherapy for PD.

Besides MCMI-III heightened scores, inclusion criteria, all evaluated by the treating clinician in case therapy was undergoing, or by the conductors of the MIMBT groups, were as follows: individuals had to have been in individual therapy until they a) were at least partially aware of their affects and, to some degree, of their triggers; b) were aware of their difficulties in identifying, naming and disclosing affects and were willing to use mindfulness to increase such an awareness; c) had agreed with their clinician that it is their construction of events more than the events themselves that cause them problems; d) the therapy relationship on an individual basis was solid enough to allow participation in a group and ensure a willingness to continue with mindfulness exercises. There could still be alliance ruptures, but with appropriate work (Dimaggio et al., 2010; 2015; Tufekcioglu and Muran, 2014; Safran and Muran, 2000) they were usually repaired. Exclusion criteria were clinically evaluated by the treating clinician and comprised of presence of antisocial, borderline or histrionic PD, in order not to have the need to devote time to reducing severe emotional dysregulation in-session, as that was outside the scope of the program; psychotic disorder or bipolar I disorder; substance abuse requiring specialist treatment, mental impairment or evidence of organic brain disorder.

As this was a naturalistic effectiveness study, additional treatment was permitted, both prior and concurrent with MIMBT. The current study involved 28 individuals. Twenty six had been in receipt of individual MIT for PD for between 6 months and 2 years; of these, 3 individuals were on medication with mood stabilizers and anxiolytics, 1 was receiving antiretroviral therapy for HIV; 2 had concluded their own therapy.

The study was approved by the local ethics committee.

Mindfulness instructors: Two clinical psychologists, one man and one woman lead the groups. They have respectively 15 and 10 years experience of cognitive psychotherapy, 7 years of experience of MIT and respectively 8 and 6 years of experience in mindfulness.

Intervention: MIMBT for PD consists of 9 weekly sessions. Groups are made up of 5 to 10 participants who have already undergone or are currently undergoing an individual psychotherapy. The 9 sessions are structured so that participants can gradually proceed at their own pace in learning the required skills. These include precisely identifying one's mental states, being aware of one's mental functioning at a given moment, shifting attention from emotionally-arousing images (avoiding every form of mental control), understanding others distinctly from one's own point of view and increasing one's ability to access self-soothing feelings. The program structure is summarized in Table 2

TABLE 2 ABOUT HERE

Session 1 introduces the program. An explanation is offered of interpersonal rumination - and rapid commutation exercises are used to introduce the difference between a mind that thinks, controls and evaluates and a mind that is aware as it observes its everchanging inner landscape. Questions and concerns are dealt with and the instructors explain what mindfulness *is* and what it *is not*. Sessions 2-4 introduce guided meditations focused on the body. Body scan and self-awareness yoga help individuals to attend to basic experiences, e.g. anxiety, fear or anger. Meditation focused on breathing, sounds and walking is used. In sessions 5 and 6 participants become familiar with both pleasant and unpleasant thoughts and complex emotions (e.g. jealousy, envy). In session 5 individuals are asked to recall positive thoughts about interpersonal relationships and identify the effects on their mood. In session 6 individuals are asked to remember distressing thoughts about interpersonal relationships and try not to react to or avoid them but rather be aware of the effects on their bodies and feelings. In sessions 7-9 meditation is focused on interpersonal problems. Individuals are asked to recall a painful autobiographical memory in their relational lives, which they acknowledged to be typical and recurring. Once the memory has been elicited, the schema is reconstructed (see Dimaggio et al., 2015; Luborsky and Crits-Christoph, 1998) according to this structure: patient's *wish* (e.g. being accepted), the *response of the other* (e.g. rejects or criticizes) and the *response of the self to the response of the other* (e.g. shame or seeing oneself as inept or unlovable). Once formulation of the schema is shared, individuals are asked to evoke two other personal memories consistent with it. They then assessed the 3 painful memories on the Subjective Units of Disturbance Scale (SUDS; Kim et al., 2008; Tanner, 2012) and rank them from the least to the most painful. Therapists then explained that these 3 memories would be discussed, beginning with the less painful ones, and then become the subject of meditation. They are then asked to describe the sensations, thoughts and feelings they experienced both during the episode and in the here and now of the session. Finally they are asked to take a different perspective about the event. In order to adopt a different and more benevolent stance towards the self, the concluding part of the interpersonal meditation is devoted to self- and then other-acceptance.

Measures

Millon Clinical Multiaxial Inventory-III (MCMI-III; Millon, 2006) is a 175-item True/False self-report measure of 14 personality patterns and 10 clinical disorders. Items correspond closely to criteria from the DSM-IV-TR (APA, 2000). Only valid profiles were included in the sample, on the basis of the following criteria: total number of null or invalid responses less than 12, Validity Index less than 2, and raw score on Disclosure scale within the 34-178 range. Validity and reliability are strong, in particular in non-clinical samples (Rogers et al., 2000; Caparrós and Villar Hoz, 2013).

Metacognitions Questionnaire-30 (MCQ-30; Wells and Cartwright-Hatton, 2004) is a 30-item scale that measures a range of metacognitive beliefs, judgments and monitoring tendencies related to emotional disorders. It evaluates five factors: cognitive confidence, positive beliefs about worry, cognitive self-consciousness, negative beliefs about uncontrollability of thoughts and danger, and beliefs about the need to control thoughts (Wells and Cartwright-Hatton, 2004). The MCQ-30 has good psychometric characteristics and it is considered to be a brief and valid tool often used in clinical research in the metacognition and psychiatric disorder context.

The Beck Depression Inventory (BDI) (Beck et al., 1961) is a 21-item self-report instrument that assesses the severity of symptoms of depression. The internal consistency of the scale, when measured with the Italian version, is very good (Cronbach's alpha between .79 and .90), with a high test-retest reliability, from .61 to .98 (Ambrosini et al., 1991).

Inventory of Interpersonal Problems (IIP-32; Horowitz et al., 2000; Italian version Clementel-Jones et al., 1996; Lo Coco et al., 2012) is a 32 item self-report, assessing the most significant interpersonal difficulties. It is made of 8 sub-scales: 1) domineering/controlling; 2) vindictive/self-centered; 3) cold/distant; 4) socially avoidant; 5) non-assertive; 6) exploitable; 7)

overly nurturant; 8) intrusive/needy. Individuals rate each item from 0 to 4. T scores above 70 means higher level of interpersonal distress. The IIP-32 has been shown to possess high internal consistency, reliability and validity, and high test–retest reliability (Soldz et al., 1995).

Toronto Alexithymia Scale (TAS-20; Bagby et al., 1994) is a self-report tool used to measure alexithymia. It includes 20 items that are rated on a 5-point Likert scale ranging from 1 = "strongly disagree" to 5 = "strongly agree." The items are added up to produce a total score out of 100, with lower scores indicating better outcomes. The TAS-20 also includes three subscales that evaluate different dimensions of alexithymia: (1) difficulty describing feelings, (2) difficulty identifying feelings, and (3) externally oriented thinking. TAS-20 had good internal reliabilities for total and factor scores, with all coefficient alphas greater than .70 (Parker et al., 2003). The alexithymic status of an individual can also be categorized based on the use of cut-offs for the TAS-20 total score (Bagby et al., 1994): Scores less than or equal to 51 reflect non-alexithymia, scores of 52-60 reflect possible alexithymia, and scores of 61 or greater reflect full alexithymia.

Analyses

Descriptive statistics were calculated to examine demographic and clinical characteristics. Paired sample t tests were calculated to examine whether individuals displayed significant improvements as measured by the outcome variables. All tests were two-tailed and with an alpha level of 0.05 to determine statistical significance. Bootstrapped confidence intervals for mean change were created using 1000 resamples. Effect size was estimated using Cohen's *d* where effect sizes of 0.2 are considered small, 0.5–0.6 medium, and ≥ 0.80 large. All the data analyses were carried out with SPSS for Windows, Version 24.0.

Results

Demographics and mean scores on the MCMI scales are listed in Table 1. All participants had scores on at least one personality disorder subscale > baseline rate score of 60. Session attendance was very high (n=28, 96%) (see Table 3). With regard to the primary outcome there was a significant pre-post change on Total Metacognitive worry score (n=28 mean change = 5.93; 95% CI= 1.89 to 10.11; p=0.01), which was consistent with a medium effect size (d=0.53). In terms of secondary outcomes, there was a significant change in depression scores across treatment (n= 15 mean change = 5.00; 95% CI= -0.13 to 9.13; p=0.05), although this was marginally significant once bootstrapped (p=0.053). The change was consistent with a medium effect size (d=0.54).

With regard to interpersonal problems, there was no significant change across treatment (n= 25 mean change = 3.20; 95% CI= -2.40 to 8,64; p=n.s) and the magnitude of change was small (d=0.22). Although all IIP subscales also yielded non-significant changes, there was a pattern of results whereby the magnitude of effect was slightly larger for the Cold/Distant, Non-Assertive, Self-Sacrificing and Intrusive/Needy Subscale (d=0.24 – 0.36). In terms of potential mechanisms of change, alexithymia and or emotion regulation scores were in non clinical range at baseline and so there were no significant change on both measures. Of note, the non-significant change on emotional regulation was of medium effect size (n=14; d=0.54), indicating that this would be a potential mediator of change in a larger sample.

TABLE 3 ABOUT HERE

Discussion

Many individuals report worry about interpersonal relationships, a symptom with negative consequences on well-being, mood and quality of relationships itself. Mindfulness can be a suitable tool in order to address this symptom. We devised a program, MIMBT, aimed at making individuals aware of the interpersonal schemas which is the theme of their worries and then letting it be the focus of meditations. The results of this pilot study were promising: the program was well

accepted by participants, with no drop-outs out of 27 individuals and a very good session attendance. This means the program is feasible and welcomed by participants. As regards outcomes, there was a significant change in worry, indicating that participants' tendencies to worry diminished after treatment. As regard depression, which is a feature commonly linked to rumination (Nolen-Hoeksema et al., 2008), we obtained a significant reduction.

An unexpected finding was the lack of improvement in interpersonal problems, both at the global and sub-scales level. A likely explanation for absence of improvement here is that that all individuals had had or was currently having individual psychotherapy, which means that very likely improvement in this domain already occurred (Castonguay et al., 2006; Constantino et al., 2002) and the remaining issue was not how they frame interpersonal relationships in their mind but their tendencies to worry about them. So by treatment termination they did not change the way they see interpersonal relationships but did worry less about them. . In any case, given that nonsignificant trends towards improvement were evident in our sample, it is possible that if the program is applied at treatment onset with individuals experiencing interpersonal distress, larger benefits would become evident. In terms of our putative mechanisms of change, alexythimia and emotion dysregulation, both indicated nonsignificant trends towards change. Despite the lack of significance, we consider this a promising finding, given that both measures were in the nonclinical range at treatment onset, suggesting a potential floor effect. With replication in a therapy-naïve sample, or assessed at the beginning of their therapy course, and with problems in emotion awareness and regulation, it is possible that MIMBT would be able to generate significant improvements.

Limitations.

Though the findings were promising, this study had a number of limitations. First, it was a non-controlled study on a small population, with a convenience sample of patients able to pay the therapy for themselves and ones that had been in individual therapy for some time. The investigators were the same individuals as developed the protocol, which makes the result possibly subject to an allegiance bias. All individuals had or were having individual therapy, a factor we could not control for, so there is still a chance that changes were due to something happened in the individual therapy during the application of MIMBT protocol. Individuals were referred by the treating clinician, which is a cause of a possible selection bias, so there is urgent need of replication with recruitment done on a systematic basis and a flow-chart allowing for intent-to-treat analyses. Another elements which could have biased finding was that this is a convenience sample of patients paying for their own treatment. This could have affected findings both way. On the one hand this would make results stronger: participants completed treatment even if it had a cost, which means they accepted and welcomed it. The opposite could still be true: they invested their money and wanted to value it so sticking to treatment and wanting to make the best of it. By the way, absence of a control-group and of randomization is another limitation, though this was a feasibility and acceptability only, so with a limited scope. Treatment fidelity was not investigated, though both the conductors were the designers of the protocol. Development of a fidelity scale is a next research task. Finally, we did not assess overall mindfulness ability, global symptoms and interpersonal functioning.

Conclusions

These limitations notwithstanding, MIMBT yields promising results: acceptability was confirmed as all participants completed the program and there was a high level of engagement, as indicated by session attendance. Reductions in worry and depression were significant.

Future directions

The next step is to apply MIMT to individuals at the beginning of therapy. Given that worry about interpersonal problems is a key issue for individuals with PDs, its assessment needs to be included in these studies. Replication should also involve larger samples and possibly done with a randomized design. It is also important to evaluate if MIMBT yields incremental value over

currently available and validate mindfulness protocols, such as Mindfulness-Based Cognitive Therapy (Segal et al., 2002) or Mindfulness-Based Stress Reduction (Kabat-Zinn, 1990), in particular in the target domains of interpersonal problems and social functioning. Another limitation was the non-controlled presence during the program of many individuals' individual therapies. It is thus impossible to know whether the results were caused by MIMBT, individual therapy, or by a combination of the two. It has also to be investigated whether starting treatment with MIT individual plus MIMBT yields incremental benefits to MIT alone.

Inclusion criteria were very narrow, which limits the generalizability of the findings. Moreover, all individuals had been in psychotherapy for months to years, and the duration of their former psychotherapies was not controlled for. If our results are replicated, MIMBT should be considered a welcome add-on to the treatment of this difficult population. There was no systematic screening and individuals were referred on their individual clinician's advice, so that data on individuals who were offered a place in the program but declined are unavailable making it impossible to perform intent-to-treat analyses. Individuals were all of the same ethnicity and their socio-economic status was reasonable, so that they were able to pay their private therapy. Finally, symptom level was low. Replication is needed in individuals with lower socio-economic status, and higher distress. With replication and generalization, there is the hope that MIMBT can help forming more benevolent and less distressing appraisals of relations with significant others. Results from this benchmarking study adds to findings that metacognition oriented therapies, in different formats, have capacity to keep patients with different disorders in therapy at high rates, with effects on a wide array of outcomes and are very well accepted by patients (de Jong et al., 2016; 2018; Dimaggio et al., 2017b; Gordon-King et al., 2018; Inchausti et al., 2018; Popolo et al., 2018; Vohs et al., 2018).

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