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Metacognitive interpersonal therapy in group (MITG) for young adults with personality disorders

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Metacognitive Interpersonal Therapy in group (MIT-G) for young adults with personality disorders: a pilot randomized controlled trial.

Abstract

Young adults with personality disorders (PD) other than borderline are in urgent need of validated treatments to help them in managing important life transitions. Therapeutic interventions focused upon social and interpersonal difficulties may facilitate these individuals in maximising opportunities for employment, forming stable romantic relationships and belong to social groups. It is also important that they are offered evidence-based, first-line time-limited treatments in order to maximize effectiveness and reduce costs. We developed a 16-session programme of group-based Metacognitive Interpersonal Therapy (MIT-G) including psychoeducation on the main interpersonal motives, an experiential component enabling practice of awareness of mental states; and use of mentalistic knowledge for purposeful problem-solving. We report a feasibility, acceptability and clinical significance Randomized Clinical Trial. Participants meeting inclusion criteria were randomized to receive MIT-G (n=10) or waiting list+TAU (n=10). Drop-out rate was low, and session attendance high (92.19%). Participants in the MIT-G arm had symptomatic and functional improvements consistent with large effect sizes. In the MIT-G arm similarly large effects were noted for increased capacity to understand mental states and regulate social interactions using mentalistic knowledge. Results were sustained at follow-up. Our findings suggest potential for applying MIT-G in larger samples to further test its effectiveness in reducing PD-related symptoms and problematic social functioning.

Introduction

Evidence for the effectiveness of psychotherapy for individuals with personality disorders (PD) is accumulating, challenging the belief that PDs are treatment-resistant (Livesley, Dimaggio & Clarkin, 2016). This evidence notwithstanding, there are several issues that require addressing. First, with some notable exceptions (e.g. Bamelis et al., 2014), the large majority of the studies are focused on borderline PDs (e.g. Bateman & Fonagy, 2009; McMain et al., 2009), leaving other PDs under-investigated. Indeed, there is an urgent need for evidence-based psychological interventions (EBPI's) addressing the needs of patients with a wide range of PDs (e.g. obsessive- paranoid, dependent, narcissistic, avoidant).

A second problem is treatment costs. Therapy for PD requires time, as even well designed, successful trials of EBPIs (e.g. Bateman & Fonagy, 2009; Doering et al., 2010; Jørgensen et al., 2013; McMain et al., 2009) are compromised by significant proportions of non-responders, and high levels of post-treatment morbidity. With increased pressure on resources for healthcare delivery, clinicians face the conundrum of optimize therapeutic effectiveness whilst also maximizing economies in delivery time (Kramer et al., 2014). The challenge of increasing effectiveness can be particularly pronounced for young adults with PD, as they face life transitions such as job instability, moving outside their home town, formation of stable romantic bonds and affiliating with new social groups. These life challenges differ from earlier, adolescent difficulties in social and interpersonal functioning. Obtaining rapid therapeutic outcomes with these individuals may facilitate more effective life transitions, thus helping them move forward in life, whilst also forestalling further loss of opportunities and preventing the emergence of chronicity in PD.

One promising format for EBPI's is a group-based approach. First, group therapy has economic advantage via cost savings. Second, for young adults, it may be particularly beneficial, as it provides a 'safe', boundaried and protected arena for modelling social interaction. This enables therapeutic scaffolding of behavior change towards more challenging real-life interactions – either

through work, interactions with peers or with potential romantic partners. From an early intervention perspective, group psychotherapy has demonstrated effectiveness in a 1-year programme for teenagers with emergent Borderline PD (Bo et al., 2016). A challenge for clinicians is therefore to design therapies that can lead to rapid outcomes which boost individuals' capacities to engage in a fulfilling and adapted social life.

Following these principles for delivery of EBPI's, we developed a treatment protocol tailored to maximize outcomes, guided by two theoretical underpinnings – interpersonal motives in social context and metacognition. Next, we briefly describe the theoretical background which led us to design a programme designed to help participants learn the basis of human motivation in social context and practice their metacognitive abilities.

Interpersonal Motives in social context

Humans often struggle to meet goals related to basic evolutionarily shaped motives and suffer if they foresee that these goals will stay unmet (Bowlby, 1969; Fassone et al., 2016; ; Gilbert, 1989; Ivaldi, 2016; Lichtenberg et al., 2016; Liotti & Gilbert, 2011; Panksepp, 1998; Tomasello et al., 2005). . Cognitive and psychodynamic theories about human motivation concur (Baumeister & Leary, 1995; Gilbert, 2005; Ivaldi, 2016; Liotti & Gilbert, 2011; Lichtenberg, 1989; Tomasello et al., 2005) indicating that several motives exist including attachment (Bowlby, 1969), social rank/competition, group inclusion/affiliation, caregiving, exploration/autonomy, sexuality and cooperation among peers. These motivational goals have emerged in order to increase the likelihood of survival and adaptation to an ecological niche. As a consequence, social or internal signals indicating that these goals will remain unmet can trigger distress to the individuals, regardless of the accuracy of the appraisal. If these negative appraisals become rigid over time, psychological distress becomes chronic leaving individuals impaired in the development effective strategies to adapt themselves to the social context (Cortina & Liotti, 2014). Therefore, helping individuals find avenues to meet such those goals

should and make their attributions more complex and flexible, should reduce distress, increase hope and motivation, and enhance their capacity to form and sustain social bonds

With regard to specific motivational goals attachment (Bowlby, 1969) is the need to find protection and cares in moments of distress by someone perceived as strong, safe and secure. Social rank is activated under limited resources and gives a hierarchical framework for access to those resources (Gilbert, 2005). When moved by this motive, individuals experience anger when they perceive someone is defying them or threatening their status, pride or despise when they feel superior, shame when feel the other is humiliating them and making them feel inferior, and sadness. Group inclusion/affiliation refers to the basic need to belong. Humans cannot live without a sense of being part of a larger community where they share value, interests, rites and goals. Caregiving complements attachment and is triggered by the perception that someone that is important to us and we consider in distress, danger or pain. The capacity for autonomous exploration of the environment is also important (Panksepp, 1998). Exploration denotes the ability to seek new resources in the environment and is triggered by curiosity. The sexual system regulates behaviours related to courting and seducing a possible romantic partner, with the goal of forming long-term bonds where primary sexual drives can be met and yield erotic pleasure. The cooperative system is fundamental for the formation of stable bonds and for the maintenance of cohesive groups (Tomasello et al., 2005). It aims at forming alliances and join resources to meet shared goals. Within the group-psychotherapy format outlined below we considered that providing participants in the programme with information about these motives that drive human behavior, and the emotions that are typically associated with these systems, would help them in making sense of what they and others experience when engaged in emotionally arousing social interactions.

Metacognition

Following from the above, one barrier to a healthy and adapted social life is poor metacognition - that is the capacity to identify, reflect upon and master states of mind both of the self and of the others, as well as have the ability for reflection and mastery (Carcione et al., 2010; 2011;

Dimaggio & Lysaker, 2015; Semerari et al., 2003; 2007). Individuals engage in metacognitive activity by identifying and understanding how we feel and what drives us to act; and by forming an integrated view of ourselves, whilst holding various mental states that continuously alternate within ones' mind. Individuals also use metacognitive skills when trying to understand how others are feeling and the intentions that are likely guiding their behavior. Lastly, metacognition includes the ability to use an understanding of mental states to manipulate and master them. For instance, mastery may be evidenced by manipulating conditions in which we calm down, concentrate or relax. Metacognition has been found to be impaired in the wide range of PDs and associated to symptoms and interpersonal difficulties (Lysaker et al., 2014; Maillard et al., 2017; Outcalt et al., 2016; Semerari et al., 2014) and appears as growing during successful treatments (Carcione et al., 2011; Dimaggio et al., 2009; Semerari et al., 2005). Overall, a knowledge of mental states is beneficial for the maintenance of relationships as it helps us foresee probable occurrences when we interact with others, solve any relational conflicts that may transpire, and achieve mutual relational goals. Metacognitive skills can fluctuate as the quality of relationships vary (Semerari et al., 2007). With a well-modulated emotional atmosphere and a cooperative relationship context aimed at pursuing common goals, a patient can have easier access to own thoughts and affects, and in parallel feel freer to consider different perspective when reasoning about what is passing through the mind of the other. However, there is a need to develop better evidence that metacognition improves in psychotherapy, and in particular in non-Borderline PD's. To date, just one study analysed change in metacognition in a randomized trial for PD (Maillard et al., 2017). Results showed a marginal nonsignificant change in metacognition during 10-sessions of General Psychiatric Management for BPD, albeit with an improvement in basic abilities to use mental state awareness to effectively cope with symptoms

We also reasoned that young adults, once provided with psychoeducation about the main interpersonal motives and the associated cognitions and affects humans experience when driven by those, needed to practice mentalizing (Bateman & Fonagy, 2004) in the context of emotionally driven exchanges. Therefore MIT-G includes an experiential component, where individuals practice the

ability to understand and regulate state of minds in the context of emotionally charged interactions. With such a richer knowledge ground, they could face with less distress and more success the demands of real life in the relevant life transitions they are facing.

Metacognitive Interpersonal Therapy and the development of the group format.

To address problems in metacognition, in the context of struggling to reach for these basic, evolutionarily shaped motives, Metacognitive Interpersonal Therapy (MIT) was developed for the whole range of PDs (Dimaggio et al., 2007). Subsequent work has developed a series of formalized procedures within MIT to address these needs (Dimaggio et al., 2015). These include work aimed at forming a shared understanding of functioning, whereby clients are helped to develop an understanding of what they think and feel, and of how they are guided by maladaptive interpersonal schemas whilst striving to reach these goals. Furthermore, MIT fosters the client's ability to take a critical distance from his/her maladaptive beliefs about the self and the others, together with an emphasis on access to healthy self-parts (e.g. self as lovable, active, committed, motivated, safe, curious, trustful, able to explore psychological states and so on). Clients are then invited to try new actions and to expand their meaning making repertoire and to pursue goals they feel that deeply belong to them to live a progressively more adapted and fulfilling life. MIT has been demonstrated to be effective in a single case series of patients with PD (Dimaggio et al., 2017) and results have been replicated in a multiple-baseline single case series (see Gordon-King, Schweitzer & Dimaggio, 2017; in press).

In order to meet the need to develop short-term group protocols, we designed a combined psychoeducational/experiential format of 16-sessions - MIT-Group (MIT-G). Here participants are first briefed about the existence of the above described interpersonal motives, and then are invited to narrate episodes related to these motives. These episodes are then role-played, to promote metacognition. With increased knowledge about mental states, participants can then search for more meaningful and adaptive solutions to their interpersonal difficulties. The idea is that, at least in part, the capacity to use mental states for purposeful problem solving can be trained. First, individuals need

to know basic concepts about what happens in humans when engaged in the process of meeting evolutionarily shaped motives, and then should practice using mental states understanding in a protected environment, which is the therapy group. MIT and MIT-G together with its parallel application to psychosis (MOSST; Ottavi et al., 2014), are consistent with a suite of therapies aimed at improving awareness of mental states, including Metacognitive Reflection and Insight Therapy (MERIT; Lysaker & Klion, 2017; see Vohs & Leonhardt, 2016 for its application to PD) and metacognition oriented training (Moritz et al., 2011) or social cognitive training (Horan et al., 2018). There are significant similarities with MERIT (see Lysaker et al., 2011) as both approaches endorse the premise that metacognition needs to be improved in a context of subtle attention to the intersubjective process and that the therapeutic goal is to achieve a richer and open-ended making of own life. However, MIT-G uniquely endorses evolutionary motivational theory and aims to first detecting, prior to changing maladaptive interpersonal patterns. MIT differs from metacognitive training (Moritz et al., 2011) and social cognitive training (Horan et al., 2018) as these therapies primarily focus on enhancing correct detection of cognitive biases and of emotions (rather than erroneous detection), whereas MIT seeks to promote flexible reasoning about mental states.

Study aims and hypotheses

In this feasibility study we aimed to address the acceptability and clinical effectiveness of MIT-G in a sample of patients diagnosed with mixed PD's (mostly of the over-regulated type). Our primary hypothesis was that MIT-G would lead to reduction in symptoms and improved wellbeing and functioning compared with treatment as usual (TAU). Our secondary hypothesis was that MIT-G would be associated with greater improvements in candidate mechanisms of change than TAU, specifically considering changes in metacognition, emotional awareness and emotional regulation.

Methods

Participants

Twenty participants were assessed as eligible to participate, having met criteria for Avoidant, Dependent, Obsessive-Compulsive, Narcissistic, Paranoid, Passive-Aggressive and Depressive PD.

Participants meeting PDNOS criteria (as diagnosed for meeting at least 10 criteria at SCID-II) were included, provided that criteria came from these and schizoid PD. Exclusion criteria were: Intellectual disability, organic brain disease or severe somatic disease impairing cerebral function, psychosis, bipolar I disorder or substance abuse severe enough to require specialized treatment. Antisocial and schizotypal PDs were also excluded. Patients hospitalized in the month before the beginning of the programme were excluded, as were patients with prominent emotional dysregulation, intense suicidality or physical aggression towards others. Patients who were unable to consent could not be included. In addition to meeting inclusion criteria, given that participants were recruited from an outpatient setting, patients had to have been referred for treatment of social or interpersonal problems e.g. difficulties in the vocational field, forming and sustaining romantic bonds and feeling excluded from groups.

Design and procedures

Psychologists and psychiatrists working in an Outpatient Mental Health Service in (BLINDED) were briefed about the study aims and goals. All patients referred to an outpatient facility for mental health in (BLINDED) between October and November 2015, and aged between 18 and 25, and who potentially met inclusion criteria were referred for assessment. Participants meeting inclusion criteria were subsequently randomly allocated to one of two conditions (see Fig. 1): the MIT-G programme or waiting list control TAU. (which included consultations on medications and supportive counselling). Assessments of symptoms, functioning and psychological processes were conducted at baseline and repeated for both groups at conclusion of the group. Psychologists performing assessments were blind to treatment allocation and groups. Therapists were blinded to outcomes and process measures until after follow-up. Participants in the MIT-G were evaluated at a 3-months follow-up. However, upon request of the ethics committee, participants in the waiting list+TAU arm had to begin MIT-G once both groups had completed assessment at termination, without waiting for the follow-up, so could not evaluated at the 3-months follow-up. The study was approved by the local ethics committee and all subjects gave written informed consent. Of 20 patients

meeting inclusion criteria, 10 were randomized to each group. Given the characteristics of the study and the nature of the intervention, conducted in a public mental health outpatient facility, it was impossible to run a double-blind study.

INSERT FIGURE 1 ABOUT HERE

Intervention

The MIT-G programme comprised 16 sessions of two hours each. Every session had a fixed structure. Sessions were divided in blocks of 2 or 3 sessions for each specific motivational system. During the first session of each block each motivational system was described in simple language. Then a series of video clips were presented, taken from movies or cartoons, demonstrating situations where actors' behavior was driven by the specific motive. This scaffolded the therapists' description of typical triggers, shut offs and typical human experiences of each motivational drive. Systems were presented in the following order: 1) social rank/competition, 2) group inclusion/affiliation, 3) attachment, 4) caregiving, 5) exploration, 6) sexuality and 7) cooperation. After psychoeducation, therapists asked participants to write down a specific autobiographical memory where their actions were driven by that system. Therapists then selected one situation to be role-played. Across the programme all participants had to role-play at least one episode from their own life. The scene enacted was then replayed with the participant taking the part of the other. In the ensuing group discussion, the protagonist and all the group members were asked to reason about what kind of mental states the participants might have experienced and identify the verbal and nonverbal cues guiding this position. In the second session concerning the same motive, participants were asked to attempt a problem-solving strategy during the role-play, on the basis of the mental states that they are experiencing and of the ones they ascribe to the others. In metacognitive terms, therefore, the second session (and the

third in the case of cooperative system), focused on mastery, that is the capacity to use information about mental states in order to reach own goals, solve conflicts and find and promote more fulfilling and cooperative relationships.

During the 16th session the participants shared their experience of the programme and reviewed the process of change, including possible benefits and what the group brought to their life. They also discussed continuing problems and any issues arising concerning the programme itself.

Therapists, training and supervision

Two MIT-certified therapists, both clinical psychologists with 5 years of experience, led the group. Prior to starting MIT-G, therapists completed a 12-hour training programme with one of the two developers (BLINDED). During programme delivery, therapists were supervised for 1.5 hours per fortnight, in order to increase fidelity and adherence to the manual and to evaluate any clinical problems arising within the group. Therapists involved in MIT-G did not deliver any sessions or consultation to participants involved in the waiting-list+TAU group.

Treatment as usual

TAU consisted of weekly individual consultations with clinical psychologists of the Mental Health Service and were oriented to support participant's emotional suffering. No interventions aimed at promoting metacognition or providing psychoeducation on motivational systems underlying social behaviour were included in the TAU condition. Psychiatric consultation was available if clinicians considered it necessary or if requested by the participant.

Materials

Structured Clinical Interview for DSM-IV Personality Disorders (SCID-II; First, Spitzer, Gibbon, & Williams, 1997). This diagnostic interview was used to assess eligibility for the study and to identify PD psychopathology.

Clinical Outcomes in Routine Evaluation Outcome Measure (CORE-OM): (Evans et al., 2002) is a 34-item self-report questionnaire assessing problems and symptoms in four domains: subjective wellbeing, symptoms (anxiety, depression, somatic complaints, trauma-related); general, relational and social functioning, and risk (aggression towards self, e.g. suicidality, or towards others, e.g. aggression). The Italian version (Palmieri et al., 2009) has good psychometric properties, with internal consistency not differing significantly between clinical and non-clinical samples, and all domains demonstrated α 0.7 - 0.9.

Metacognition Assessment Scale-Abbreviated (MAS-A; Lysaker et al., 2005) is a rating scale, adapted from the MAS (Semerari et al., 2003) that assesses synthetic metacognitive capacities or the ability to synthesize discrete pieces of information into an integrated representation. This assessment is rated on the basis of the Indiana Interview for Psychiatric Illness (IPII, Lysaker et al., 2002) and produces four scores and a total score which is the sum of those four scores. Self-reflectivity is a 9-point scale that gauges one's ability to form ideas about oneself in an increasingly plausible and integrated manner. Awareness of the Mind of the Other is a 7-point scale that assesses one's ability to form ideas about others in an increasingly plausible and complex manner. Decentration is a 3-point scale that addresses one's ability to form ideas about oneself and others within the context of the larger world. Mastery is a 9-point scale that assesses one's capacity to use knowledge of oneself and others to respond to psychological and social challenges. For all four scales, higher scores indicate greater capacity for metacognition. The MAS-A has good inter-rater reliability with intra-class coefficients ranging from 0.71 to 0.91 (Lysaker at al., 2005). MAS-A scores have been associated with assessments of awareness of illness, complexity of social schemas, preferences for active coping, and cognitive insight (Lysaker et al., 2015).

The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a self-report measure scoring on six dimensions of emotion dysregulation though we only used the total score here. The Italian version of the DERS (Giromini, Velotti, de Campora, Bonalume, & Zavattini, 2012)

has good psychometric properties in both clinical and community samples. In the current study, internal consistency for the DERS total score was good (α = .89).

The Toronto Alexithymia Scale – 20 (TAS-20; Bagby et al., 1994a) is a 20-item self-report measure of alexithymia. Items are rated using a five-point Likert scale, with participants indicating level of agreement with statements that assess both the affective and cognitive elements of the alexithymia construct. Total scores range from 20 to 100, with higher scores indicating greater degree of alexithymia. Scores exceeding 60 are indicative of clinically significant alexithymia. Evidence of acceptable internal consistency, test-retest reliability, and construct, concurrent, and convergent validity has been reported (Bagby et al., 1994a; 1994b). Internal consistency in the current study was α = .66.

Statistical analyses

Data were explored for normality and parametric or non-parametric statistics used accordingly. Baseline descriptive statistics and comparisons were reported for socio-demographic and clinical variables using independent samples t-tests for continuous variables and chi-squared tests for categorical variables. Comparisons between groups at follow-up were initially analysed using independent samples t-tests for group differences, with equal variances assumed where indicated. Univariate analyses of covariance were used to investigate changes between groups across time-points. Paired samples t-tests were used in the MIT-G group to ascertain whether there was a significant effect of treatment on outcomes between baseline, post-treatment and 3-month follow-up. Effect sizes were calculated using G Power 3.1.

Results

Demographics, Feasibility and Treatment Acceptability

Demographic details are listed in Table 1. Participants were aged between 19 and 25 and were unmarried. There were no differences between the groups on demographic variables. The 20 participants meeting inclusion criteria had the following diagnosis of PD (multiple PD diagnosis could be assigned): 11 Depressive PD, 6 Dependent PD, 6 Avoidant PD, 1 Narcissistic PD, 1 Paranoid PD, 4 PD NOS. Symptoms were assessed with the MINI International Neuropsychiatric Interview (Sheehan et al., 1998): 11 had Depressive disorders, 5 had Generalized Anxiety Disorder, 4 had panic attacks and 2 had social phobia.

Of the 10 participants randomized to receive MIT-G, 8 completed treatment and 2 dropped-out, one after 7 completed sessions and one after 9 completed sessions. One felt excluded from the group, the other could not further because his university schedule and group sessions did not match. Of the 8 completers, attendance was very good, participants completed on average >14 of the 16 scheduled session (attendance rate=92.19%). Of note, the clients who dropped-out still completed half of the programme, confirming the good capacity of MIT-G to retain patients in treatment and engage them in the therapy process. Only one participant of MIT-G group received benzodiazepines for a short period during treatment, the others did not receive any medication.

Changes in clinical variables across treatment are reported in Table 2. There were no differences between MIT-G and TAU at baseline on symptoms, PD symptoms or psychological variables. However, at post treatment assessment the MIT-G patients had significantly lower scores on the CORE-OM (Mean difference = -2.39, 95% CI=-7.41 to -0.79, t=-2.6, df=18; p=.018; d=1.16). There were no significant post-treatment differences between groups on emotion dysregulation, or alexithymia, although effect sizes were of medium size. There was also a post-treatment group difference on self-related metacognition with MIT-G patients displaying significantly higher scores (Mean difference = 2.40, 95% CI = 1.16 to -3.64, t=4.10, df=18; p=.001, d=1.82). There were no significant between group differences post treatment on other-related metacognition or decentration, although the difference in Mastery scores approached significance in favour of MIT-G (Mean difference = 1.13, 95% CI = -0.08 to 2.34, t= 1.96, df = 18; p=.066, d=0.56). Effect sizes for within-

subject pre-post treatment changes indicated large effect size improvements (see Cohen's d; Table 2) on CORE-OM, alexithymia, self-related metacognition, other-related metacognition, and mastery in the MIT group; and effect sizes of medium magnitude for emotional dysregulation and metacognitive decentration. In contrast, the only moderate magnitude within-subjects effect size change for TAU was on CORE-OM, with all other variables reporting small or negligible effect sizes for within-subjects change on TAU.

When baseline scores were included in the analyses, ANCOVAs indicated a significant effect of treatment on CORE-OM symptoms in favour of MIT-G (F(1,17) = 5.32, p <.034, pη2 = .24). We also identified a significant effect of treatment on alexithymia scores in favour of MIT-G (F(1,15) = 5.69, p <.0312, pη2 = .275), but there was no difference between groups on DERS totals. With regard to metacognition, we observed significant improvements in the MIT-G arm on Self-related metacognition (F(1,17) = 21.65, p <.001, pη2 = .560), Decentration (F(1,17) = 5.74, p <0.28, pη2 = .252) and Mastery (F(1,17) = 9.07, p <.008, pη2 = .348), but not in Other-related metacognition.

With regard to follow-up paired samples t-tests indicated that at 3-month follow-up the MIT-G group had significantly lower CORE-OM scores than at baseline with a large magnitude of change (Mean difference = 12.0; SD = 6.60; 95%CI = 7.26 to 16.70; t=5.74; df = 9; p<0.001; d=1.93) and compared with post-treatment follow-up (Mean difference = 5.48; SD = 3.93; 95%CI = 2.67 to 8.28; t=4.41; df = 9; p=0.002; d=1.93). At 3-month follow-up the MIT-G group had significantly lower alexithymia scores than at baseline, with a large magnitude effect (Mean difference = 9.9; SD = 11.25, 95%CI = 1.85 to 17.94; t=2.78; df = 9; p=0.021; d=0.87), but there were no significant differences from post-treatment to follow-up. There was no significant effect from baseline to 3-month follow-up of MIT-G on emotion regulation scores, although the magnitude of change was consistent with a medium effect size (d=0.51).

Discussion

Young adults with non-Borderline PDs, presenting with both interpersonal and social difficulties symptoms need structured and economical psychotherapies, with a focus on negotiating life transitions. We designed a short-term 16 session treatment programme, guided by motivational and metacognitive principles, with an aim to promote patient's awareness of mental states, both of themselves and the others and use that awareness to first understand their problematic views of themselves and the others is mostly schema-driven and secondly to use the increased awareness in order to find more adaptive solution to their struggles.

Therapists could be easily trained and participants' compliance was high. Though we did not perform any formal qualitative analysis, it appeared that all completers reported in their post-treatment interviews IIPIs having had positive experiences both in regard to outcomes and their experience of social contact with the other participants. Outcomes on symptoms and social functioning measures were positive with clear improvements in the MIT-G arm at therapy termination, with results sustained at follow-up. Effect sizes were of large magnitude, suggesting that MIT-G is useful in domains of interest for young individuals with PD. Unfortunately, our hypothesis that MIT-G could help improve emotion dysregulation was not sustained in our analyses though the statistical trend was towards improvement. It may have been the case that the small sample size inflated the likelihood of a Type II error . We note that, based on the magnitude of effect size, relatively modest increases in sample size should also give adequate power to identify significant change on the emotion dysregulation, alexithymia and metacognitive Mastery scales.

The theoretical basis for MIT-G postulated that changes in functioning would be attributable in part to improvements in awareness of mental states and the capacity to use psychological understanding. Thus, metacognitive awareness and capacity would be the mechanism of changes underlying improvements in social adjustment and capacity to cope with distress. Our results supported this idea, as many aspects of metacognition significantly increased from pre to post-treatment with large effect sizes. This is the first time such an effect of metacognition is demonstrated

in a controlled study of metacognition oriented therapies for PD and replicates similar outcomes in related therapies for psychosis such as MOSST (Ottavi et al., 2014; Inchausti et al., 2017). Patients in the MIT-G arm became more aware of their mental states and begun to take a critical stance towards their own evaluations of social interactions, so able to question their maladaptive assumptions that, for example they were inept or inadequate. In parallel they were better able to grasp that the perspective of the other is different than their own. This is not surprising, as theory (Dimaggio et al., 2008) and evidence from single case studies (Lysaker et al., 2007) suggests that developing a richer understanding of one's own mind is necessary for acquisition of an increased capacity to understand others mental states. It is also possible that participants used the perspective of the others in the group to first gain a richer understanding of their own wishes, preferences and problems and started questioning their rigid beliefs about self and others. This came together with realizing that others see the world differently than the individual does (Semerari et al., 2014), though they gained only a marginally richer understanding of the complexities of the mind of the others. Finally, participants capacity to use mentalistic information to inform purposeful problem solving grew over the course of treatment. This was a stated goal of the MIT-G, as the programme included role-plays aimed at solving relationally challenging situations via deeper awareness of mental states. Improvements in the capacity to understand mental states were also evident through clinically significant reductions in alexithymia: as participants become more able to find emotional words to describe their inner experiences. These results are consistent with previous non-controlled studies demonstrating that metacognition grows in successful therapies for PD (Carcione et al., 2011; Dimaggio et al., 2009; Semerari et al., 2005). Our results also correspond with gains in metacognition observed during a randomized trial for BPD (Maillard et al., 2017), although the effect in the current study is of larger magnitude. The difference in magnitude of change between the two studies may in part be attributable to differences in presentation, with our non-BPD group perhaps having a less dysfunctional pattern of emotion regulation, with correspondingly greater capacity to rapidly engage with the metacognitive aspects of the treatment approach. Results are also consistent with findings using other instruments

that demonstrate increased capacity to reflect on mental states via psychotherapeutic intervention (Fisher-Kern et al., 2015; Levy et al., 2006). Going forward our intention would be to explore whether metacognition predicts change, potentially via advanced techniques such as mixed effect modelling. This statistical approach has yielded promising demonstrations of the effectiveness of EBPI's in small samples in other complex mental health problems (Foster et al., 2010).

As a feasibility study we acknowledge a number of limitations. First the sample size was small, although effect sizes were large. Consequently, there is a need for replication with larger samples. Second, we acknowledge that we did not have a repeated measures baseline assessment prior to treatment, instead relying on pre-post changes. This could be addressed in a further trial. Third, assessment of change in the interpersonal domain need to be assessed with other measures in order to understand if the appraisal of self and others changed, e.g. inventories of interpersonal problems or of maladaptive schemas. Fourth, amongst the targeted PD, Obsessive-Compulsive was not present, while only one patient had Narcissistic or Paranoid PD. Results therefore cannot be generalized to these PDs. Fifth, clients were Caucasian young adults in an outpatient clinical setting so results may not generalize to other ethnicities, or other healthcare systems. Sixth, we note that use of TAU waitlist control group introduces an expectation bias around the prospect of future treatment, which may have impacted on our findings. Seventh, due to power issues we did not perform mediation analyses on mechanisms of change, instead simply noting whether improvement in these mechanisms occurred. Finally, we also note that change was in part measured using self-report measures of function (CORE-OM), therefore it would be useful for future studies to assess change on interview based measures of outcome.

With regard to next steps, future studies may evaluate if both the psychoeducational and experiential part are necessary and potentially identify what their differential contribution is to therapy outcomes. This could be achieved by using brief session-by-session monitoring. There is also the need to see if MIT-G is effective also with older individuals. Mechanisms of change must be investigated, in order to understand which mediating factors were implicated, with a possible role for

improvements in metacognition. The role of therapeutic alliance also needs to be explored. Future studies may also investigate cost-effectiveness of MIT-G, as has been implemented in other EBPI studies of BPD (e.g. van Asselt et al., 2008) and also with regard to indirect cost implications of health service usage in non-Borderline PD's (Tyrer et al. 2013).

In summary, results support former empirical findings from single-case series that MIT can be effective for PD (Dimaggio et al., 2017; Gordon-King et al., 2018). Providing young adults with mixed non-Borderline PDs with information about the main interpersonal motives, the mental states individuals experience when a specific domain is triggered, and then facilitating practice of awareness and regulation of mental states in a group format is safe, well-accepted and yields significant clinical change which is sustained over time. We propose that the findings strongly support further investigation of MIT-G for PD as a promising short-term and effective method to ameliorate symptoms and improve social functioning. We hope that future and larger studies will evaluate whether change is sustained over time. Future research can also identify how many individuals continue to move towards wellness and adaptation without further treatment and identify who, and for what reasons, will require more treatment in order to maximize therapeutic change.

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Table 1: Participant demographics and diagnostics

	MIT-G (n=10)	TAU (N=10)
Mean age (S.D.)	21.3 (.68)	21.8 (2.04)
Gender Female (n)	5	4
Highest Education Level		
Middle School	2	4
Upper Secondary School	8	6
Occupation		
Unemployed	2	6
Employed	3	0
Student	5	4

Notes: S.D. = Standard Deviation. MIT-G = Metacognitive Interpersonal Therapy – Group Format; TAU = Treatment As Usual;

Table 2: Changes in symptoms and functioning across timepoints

Measure	Baseline		Post-Treatment		3-month Follow-up	Within-group effect size baseline-post treatment		Within-group effect size baseline – 3 month follow-up	Between-group post-treatment effect size at post-treatment	
	MIT-G	TAU	MIT-G	TAU	MIT-G	MIT-G	TAU	MIT-G	MIT-G vs TAU	
	Mean (S.D.)	Mean (S.D.)	Mean (S.D.)	Mean (S.D.)	Mean (S.D.)	d	d	d	d	Post Hoc Power
CORE-OM Total	12.85 (4.60)	15.24 (6.68)	7.68 (1.94)*	11.78 (4.59)	2.20 (2.67)	1.14	0.64	1.93	1.16	0.80
DERS Total	95 (16.19)	100.9(17.67)	76.40 (26.78)	97.11 (29.17)	87.00 (20.01)	0.74	0.16	0.51	0.73	0.47
TAS-Total	54.20 (11.52)	51.5 (10.99)	43.50 (11.70)	52.63 (12.59)	44.30 (11.79)	1.11	0.10	0.87	0.75	0.49
Metacognition Self[2]	4.3 (1.32)	4.1 (0.97)	5.75 (1.36)*	3.35 (1.27)	-	1.73	0.56	-	1.82	0.98
Metacognition Others[2]	2.10 (0.52)	2.85 (1.31)	2.90 (1.07)	3.30 (0.67)	-	0.99	0.32	-	0.44	0.24
Metacognition Decentration[2]	0.75 (0.75)	1.15 (1.03)	1.15 (1.03)	0.70 (0.48)	-	0.59	0.51	-	0.56	0.33
Metacognition Mastery[2]	2.90 (1.07)	3.30 (0.67)	4.18 (1.35)	3.05 (1.23)	-	1.51	0.20	-	0.85	0.57

Notes: CORE-OM Total = Clinical Outcomes in Routine Evaluation Outcome Measure Total Score; DERS Total = Difficulties in Emotion Regulation Scale; TAS-Total = Toronto Alexithymia Scale Total Score; Metacognition Self = Metacognition Assessment Scale, Self-related Scale; Metacognition Others = Metacognition Assessment Scale, Other-related Scale; Metacognition Decentration = Metacognition Assessment Scale, Decentration Scale; Metacognition Mastery = Metacognition Assessment Scale, Mastery Scale; S.D. = Standard Deviation. d= Effect Size in Cohen's D; MIT-G = Metacognitive Interpersonal Therapy – Group Format; TAU = Treatment As Usual; * = significant difference between groups of p<.05; [1] n=8; [2] within-subjects effect sizes not available for follow-up data.