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Predicting therapy success from the outset: the moderating effect of insight into the illness on metacognitive psychotherapy outcome among persons with schizophrenia

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Abstract

The degree to which a person recognizes their mental disorder, attributes symptoms to the disorder, and recognizes that treatment may be necessary, is frequently referred to as clinical insight. The current study investigates whether clinical insight at baseline moderates the effects on metacognitive capacity of 40 sessions of Metacognitive Reflection and Insight Therapy (MERIT) among 35 participants with psychosis.

Findings showed that clinical insight did not predict drop-out from therapy. Multilevel analyses provided support for our hypotheses that insight at baseline significantly moderates metacognitive gains at both post-measurement and follow-up. Our findings demonstrate that lacking clinical insight substantially hampers the effect of this psychosocial intervention. We posit that research efforts should shift from developing interventions which enhance clinical insight, to interventions which are effective in absence of clinical insight.

Key Practitioner Message

- Clinical insight moderates the effects of 40 sessions of metacognitive psychotherapy
- Insight was not related to drop-out from therapy
- Future work should be focused on developing interventions which require no clinical insight

Keywords: insight, psychotherapy, metacognition, MERIT, psychosocial intervention

Introduction

It is a widely observed phenomenon within psychotic disorders that many clients do not share the same views as clinicians surrounding the presence or severity of their disorder (Amador, Strauss, Yale, & Gorman, 1991; David, 1990; Lysaker, Buck, Salvatore, Popolo, & Dimaggio, 2009). This awareness of disorder, along with the ability to attribute symptomatology to the disorder and recognizing the need for treatment, is commonly referred to as insight into the illness or clinical insight (David, 1990; David, Bedford, Wiffen, & Gilleen, 2014).

During the last decade a debate has taken place with regard to the importance of clinical insight, in what has become known as the “insight paradox” (Lysaker, Pattison, Leonhardt, Phelps, & Vohs, 2018; Lysaker, Roe, & Yanos, 2007). This paradox is in reference to some studies showing associations of clinical insight with *positive* outcomes such as treatment compliance, functioning and reduced relapse (e.g. Bergé et al., 2016; Gumley et al., 2014), while other studies showed its association with *negative* outcomes such as reduced quality of life, reduced hope, higher self-stigma and higher rates of depression and suicidal intent (Crumlish et al., 2005; Ehrlich-Ben Or et al., 2013; Hasson-Ohayon, Kravetz, Meir, & Rozenecwaig, 2009; Hasson-Ohayon, Kravetz, Roe, David, & Weiser, 2006). In fact, a recent study showed a considerable overlap between insight and self-stigma (Hasson-Ohayon, 2018).

Concerning adherence to medication, studies frequently find a link between insight and medication non-adherence (Lacro et al., 2002; Lincoln, Lüllmann, & Rief, 2007). Lincoln et al., (2007) note, however, that the correlational nature of studies precludes conclusions surrounding directionality: it may be that medication non-adherence predicts lower insight, which may explain studies which find the influence of insight on non-adherence fading over time (Lincoln et al., 2007; McEvoy et al., 1989; Yen et al., 2005). This hypothesis is strengthened by a meta-analysis which has found that antipsychotic drugs have a beneficial effect on insight, which generally takes place in the first three months after starting medication (Pijnenborg et al., 2015).

In the field of psychotherapy with persons with psychosis, insight has been repeatedly shown as beneficial to the therapeutic alliance (Kvrgic et al., 2013; Wittorf et al., 2009). Surrounding adherence, however, there are some mixed findings: some authors report insight as a fairly strong predictor for non-adherence to CBT in a sample of first-episode patients

(Álvarez-jiménez et al., 2009), while others found it does not play a significant role in service disengagement (refusing contact with the treatment facility; e.g. Schimmelmann et al., 2006).

Recently, a claim has been made that clinical insight might reflect an attitude toward the illness and compliance with the medical model rather than a pure awareness of having a serious psychiatric illness (Hasson-Ohayon, 2018; Lincoln et al., 2007; Lysaker et al., 2018). Particularly in the case of psychosis, the medical model which might be stigmatic for some patients, may not apply to all. Recent evidence suggests, for instance, that around 28% of patients report non-adherence to medication as a result of *gain* from illness such as companionship from voices (Moritz, Favrod, et al., 2013). Illustrating that the influence of clinical insight on the therapeutic alliance may be similarly more complex than merely “better insight means a better therapeutic alliance”, this study found that 31% of respondents indicate they did not take their medication because of mistrust towards their physician / therapist.

One avenue through which to approach a more reflective conceptualization of clinical insight may be the metacognitive framework. A recent conceptualization of metacognition considers it to be a person’s ability to form complex representations of oneself, others and the world (Lysaker & Dimaggio, 2014). Thus, it refers to reflective processes that go beyond viewing the self as having or not having an illness; i.e. having clinical insight and having high metacognition are not the same phenomenon. One study has found metacognitive abilities as a moderator affecting the implications of insight, i.e. for persons with higher metacognition, insight has more positive outcomes than for persons with low metacognition (Lysaker et al., 2013).

The positive implication of enhanced metacognitive abilities among persons with schizophrenia are extensively documented (see meta-analysis of Arnon-Ribenfeld et al., 2017), and lead to the development of interventions that promote metacognition (Hamm, Hasson-Ohayon, Kukla, & Lysaker, 2013). In addition, the positive implications of metacognition combined with high insight was shown in a cross-sectional study (Lysaker et al, 2013) but not yet in therapy. Taking these findings together and further studying the interaction between insight and metacognition, it is speculated that a psychotherapeutic metacognitive approach may be warranted for one to benefit from insight. One such intervention is Metacognitive Reflection and Insight Therapy (MERIT; Lysaker and Klion, 2017; see materials). This intervention is an individual psychotherapy with a focus on joint reflection on narrative episodes produced by the client. As the client discusses his or her life, the therapist is constantly

monitoring for metacognitive activities on four domains (see Methods) and stimulating activity at that level, or slightly above. Particularly relevant to the current study, the intervention is explicitly directed toward the patient's narrative, including the illness narrative, for joint reflection rather than correction. In other words: the intervention target is metacognition, rather than symptoms or insight. This focus is where MERIT is different from other metacognitive approaches (Moritz & Lysaker, 2018), which are more based on a Cognitive-Behavioral approach intended to increase awareness and correction of one's own cognitive biases (Moritz, Veckenstedt, et al., 2013) or interpretation of symptomatology (Wells, 2009).

Based on existing case studies, open trials and a pilot study (e.g. Bargenquast et al., 2015; de Jong et al., 2016a, 2016b; Dubreucq et al., 2016; Hamm and Firmin, 2016; Hillis et al., 2015; van Donkersgoed et al., 2016), we have investigated the effects of MERIT in a multicenter, randomized controlled trial (de Jong, van Donkersgoed, et al., 2018). Results of the trial showed that both the treatment condition as well as the control condition (treatment as usual) improved with regard to metacognition, leading to no significant differences between the groups immediately post-treatment. At 6-month follow-up, however, patients in the treatment condition demonstrated having continued the path of metacognitive improvement, while the control condition lost most of the gains, leading to significant differences between the groups at follow-up.

Based on extensive clinical experience with the method by the first author of the therapy manual (e.g. Lysaker & Buck, 2006; Lysaker, Buck, & Ringer, 2007), a minimum of 40 sessions was established as the minimum to allow for meaningful metacognitive gains. Given the length of therapy, we sought to investigate potential moderators, i.e. to identify factors which could predict whether patients would benefit from the treatment or not.

In the initial analysis of the data from the randomized controlled trial (de Jong, van Donkersgoed, et al., 2018; de Jong, Hasson-Ohayon, Donkersgoed, Aleman, & Pijnenborg, 2018), it became clear that insight had not significantly improved, neither at post-treatment nor 6-month follow-up, suggesting that the therapy did not affect insight. This finding, combined with the known relationship between insight and clinical outcome variables such as medication adherence (Hui et al., 2015), and theoretical and empirical accounts of low clinical insight as an obstacle to the therapeutic alliance (Hasson-Ohayon, Kravetz, & Lysaker, 2017; Kvrgic et al., 2013; Wittorf et al., 2009), we hypothesized that clinical insight at baseline might serve as a moderator of therapy effect. If confirmed, this would have significant clinical implications,

as it would suggest that patients with low insight will not benefit from a relatively long metacognitive psychotherapy and addressing the need of persons with low insight will require further research.

Methods

Participants

All thirteen participating therapists had completed a master's programme (MSc) of psychology at the university level. Most (11) therapists had completed an additional 2-year post-master clinical degree programme (mental healthcare psychologist). Two therapists had completed an additional 4-year post-master programme (Clinical Psychologist). These 11 therapists all had several years of professional experiences with persons with a psychotic disorder, and are as such best considered as senior therapists. Both of the two remaining therapists were PhD candidates in Clinical Psychology, of which one was enrolled in the mental healthcare psychology post-master education. As such, these two are best considered more junior or trainee therapists.

The full sample ($n=70$) is comprised of 49 men and 21 women, with a MINI-PLUS verified diagnosis of schizophrenia ($n=47$) or schizoaffective disorder ($n=23$), between 22 and 67 years old, with a mean age of 40. All were in a post-acute phase of illness, with no changes to medication in the past 30 days and an average score of 4 or less on the Positive And Negative Syndrome Scale (PANSS) scale of positive symptomatology. To be considered for inclusion in the trial, participants had to be older than 18 years old, demonstrate impaired metacognitive functioning, be able to give informed consent, and must not suffer from comorbid neurological damage, severe substance dependence or impaired intellectual functioning ($IQ < 70$). Further details of the sample are presented in table 1.

For the MERIT condition, participants ($N = 35$) were considered drop-out if they did not complete all 40 sessions. Five participants dropped out of the study before or during the first session of therapy¹, however, and as such, their data was added to the Treatment as Usual condition. Consequently, participants were divided between the groups unevenly: MERIT (30), TAU (40). We verified this did not have a meaningful impact on our outcomes by repeating all analyses with the original group assignment intact.

¹ One participant came to the first session inebriated, and was sent home with the agreement of sobriety for the next session. Unfortunately, this client did not attend any following sessions.

All participants, whether they dropped out of the study or not, were offered post-measurements and follow-up measurements. As such, all participants had baseline scores entered, but for some only post-scores or follow-up scores were available. Of thirty remaining participants receiving MERIT, eighteen completed therapy fully. Of those twelve participants who dropped out, five dropped out because their therapist (n=2) could no longer provide the therapy. Their reasons were unrelated to the study, being maternity leave and leaving for international charity work. Seven participants dropped out for other reasons: too busy with work (n=4), too far to travel (n=2), no match with therapist (n=1), 'doing too well' according to participant (n=3).

Twenty-three post-measurements were completed in the MERIT condition (intention-to-treat), of which eighteen were therapy completers. In the TAU condition, due to a clerical error, one baseline measurement was not entered, which combined with no-shows lead to the final analysis consisting of 39, 25 and 20 scores on baseline, post and follow-up respectively.

Instruments

Clinical Insight was assessed using item G12 of the Positive and Negative Syndrome Scale (Kay, Fiszbein, & Opler, 1987). This item is one of 30 symptoms assessed by the total scale, and is scored by a trained rater based on an interview which typically lasts between 30 and 45 minutes. This item, "Lack of judgment and insight", allows raters to assign a score of clinical insight based on their impression of a client's awareness of mental disorder, attribution of symptoms to the disorder, and the need for treatment. Higher scores indicating lower insight (1 = good insight, 7 = no insight). It is a common measure of clinical insight, as it has demonstrated to be strongly correlated (Sanz, Constable, Lopez-Ibor, Kemp, & David, 1998) to more extensive measures of insight such as the Schedule to Assess Insight (Kemp & David, 1997) and its extended version (SAI-E), SUM-D and ITAQ.

Relevant to the current study, poor scores on this item have been shown predictive of negative attitudes towards medication adherence six months later in an adult-onset sample (Hui et al., 2015), while better scores were predictive of recovery from positive and negative symptoms 12 months later in a first-episode sample (Gumley et al., 2014). Furthermore, it has been shown to be sensitive to change, for instance as a result of antipsychotic medication (Pijnenborg et al., 2015). The scoring criteria are made available in a supplement to this article.

Metacognition was assessed using a three-step procedure. First, the participant is interviewed using the Indiana Psychiatric Illness Interview (Lysaker et al., 2005). This open-ended interview was developed to elicit the personal and illness narrative of the participant, which may serve as a suitable spontaneous speech sample. Audio-recordings of this interview are transcribed, so as to ensure that only the content of what is said is used as an estimate of metacognitive capacity rather than peculiarities of speech such as slurred, slow or monotonous speech. Ratings of metacognition are then made individually by raters, who have completed a 4-hour training in the Metacognition Assessment Scale – A (Lysaker et al., 2005). Because raters were generally master's students of psychology, the third step was to organize consensus meetings during which all ratings were discussed with a minimum of three raters, of which one was always a PhD candidate in Psychology, to come to a final score. The MAS-A has seen widespread use in studies of psychosis, and has demonstrated good psychometric properties (Hasson-Ohayon et al., 2015; Lysaker et al., 2014; Rabin et al., 2014).

The **intervention** (MERIT; Lysaker and Klion, 2017) is an integrative psychotherapy developed to assist persons with a psychotic disorders (re)gain metacognitive capacity. The MERIT protocol was translated from English, and adapted to a Dutch context by SJ and RVD under supervision of MP and a psychologist with a post-master degree (GZ-education) in clinical psychology. The protocol does not offer a session-by-session program, but rather emphasizes eight elements which therapists should strive to include in every session. These elements are I) being open to the agenda of the client, II) offering of the therapists' thoughts regarding the patient's behavior during the session, III) eliciting a personal narrative, IV) framing a psychological problem to be discussed, V) eliciting reflections on the interpersonal processes that occur during the sessions, VI) eliciting reflections on the progress of the session or treatment. The final elements are stimulating metacognitive self-reflectivity and reflections on others (VII) and metacognitive mastery (VIII) using questions and reflections tailored to the current metacognitive functioning of the patient. An in-depth discussion of each of these elements in practice can be found in several case studies (e.g. Lysaker and Buck, 2006), including the treatment of a person with persistent negative symptoms (de Jong, van Donkersgoed, Pijnenborg, et al., 2016b), severe symptoms of disorganization (de Jong, van Donkersgoed, Pijnenborg, et al., 2016a), and one client who reached maximum levels of metacognitive capacity at therapy end (Buck & George, 2016).

Treatment as Usual was defined as the maintenance of antipsychotic medication and the remainder of any short-term ongoing interventions, as well as supporting contact with

their healthcare teams, exactly as they had before entering the study. Participants and staff were instructed not to begin any new psychosocial interventions during the study period (10 months). Two out of 35 participants indicated they had met with a psychologist in the 10 months of the study.

Procedures

Thirteen therapists from seven different mental healthcare institutes in the Netherlands were trained in the intervention by PL, during a 3-day training. Throughout the study, all therapists received bi-weekly group supervision via internet telephony, offered by the first author of the intervention (Lysaker & Klion, 2017). Therapists were asked to complete a measure of adherence to the intervention after each session throughout the study, and it was verified that they had. These were intended, however, as a basis for supervision rather than formal scientific analysis, and as such were not analyzed.

All patients in their caseloads were screened for eligibility based on the in- and exclusion criteria. All eligible participants were then coarsely screened on metacognitive functioning by their case manager or staff member most familiar with them, using four questions based on the four scales of the Metacognition Assessment Scale-A (e.g. “To what extent is the patient able to think about his or her own thoughts”) answered on a 10-point scale, with higher scores indicating better functioning. All patients who scored lower than 6 on two or more of these questions were approached for participation by a research assistant, and offered an information letter. In describing the intervention, emphasis was placed on metacognitive capacity as a target for the intervention, with the only reference to a diagnosis of psychosis in the inclusion criteria.

A more detailed description of the inclusion procedure, as well as the full test battery, is available elsewhere (de Jong, van Donkersgoed, et al., 2018). Participants were tested at three different occasions, at baseline, immediately post therapy (after 40 sessions in the treatment condition, or after 10 months in the control condition) and at 6-month follow-up. After baseline assessment, eligible patients were randomized by an independent third party. During subsequent assessments, all ratings were performed by research assistants blind to condition.

Analyses

Differences between the treatment group and control condition were tested using SPSS Statistics version 25, utilizing two-tailed independent-samples t-tests (age) or Fisher's Exact Test (gender, diagnosis), with significance levels set at $\alpha=0.05$.

Before progressing to the moderator analysis, a binary logistic regression analysis was performed, with drop-out (yes/no) as the dependent variable, and insight at baseline entered as the predictor, was conducted to determine if insight at baseline might be a significant predictor for drop-out.

All further analyses were conducted using multilevel analysis in the computer software MLWiN 3 (Charlton, Rasbash, Browne, Healy, & Cameron, 2017). Multilevel analysis is uniquely suitable to take into account nested data and deal with missing data (Field, 2013; Snijders & Bosker, 2000). In our case, three possible levels were considered: therapist, participant and time of assessment. From our previous analysis, it was clear that the "therapist" level does not significantly add to the model, and as such, only a two-level model was constructed: participant at level 2, and time of assessment at level 1. Because we were interested in whether insight *at baseline* is a significant moderator, insight scores at all measurement moments were replaced by baseline scores.

Separate models were constructed for each of the outcomes (MAS-Total and individual subscales), as the dependent variable, dummy variables representing time (T1 or T2) and interactions terms of T1*condition and T2*condition. The improvement of the model fit caused by adding the interaction terms under investigation (T1*condition*insight and T2*condition*insight) is tested utilizing the deviance test (Snijders & Bosker, 2000), with a significance level set to $\alpha=0.05$.

All tests were conducted twice: an initial exploration on the full dataset, otherwise known as "intention-to-treat". Given significant drop-out early in the therapy (sessions 1,2,6,8,9,13,20 and 22), however, this does not represent a pure test of the intervention as it is intended. As such, follow-up analyses were conducted on each of the four MAS-A subscales, using only data of completers (i.e. who had completed 40 sessions of MERIT or completed all measurements in TAU). As with the intention-to-treat analysis, participants in the MERIT condition who had not attended any full sessions were added to the TAU group², so their data

² One participant came to the first session inebriated, and sent home with the agreement of sobriety for the next session. Unfortunately, this client did not attend any following sessions.

could be included in the analysis. This total completers-sample consisted of 58 participants (TAU=40, MERIT=18). For participant flow, see figure 1.

Finally, we explored in both intention-to-treat and sensitivity datasets whether any possible overlap between metacognition and clinical insight at baseline would have influenced our results. A bivariate correlation analysis was conducted to this effect, and separate models were constructed including interaction terms of insight with baseline metacognition ($t1*condition*baseline$ metacognition and $t2*condition*baseline$ metacognition) to test their contribution to the model.

Results

Demographic and background variables are presented in table 1. Our sample was, on average, 40 years old, predominantly male (M:41, F:29), with a diagnosis of schizophrenia (Sz: 47, Sa: 23), with an average duration of illness of 14 years. Groups did not differ significantly on these characteristics.

Binary logistic regression analysis revealed that clinical insight was not a significant predictor for drop-out from the study ($wald=.4(1), p=.527$) or from the therapy group separately ($wald=.028(1), p=.868$).

Visual inspection of the data heavily suggested a moderating effect of insight on metacognitive gains. For ease of interpretation, in figures 2 and 3, we have performed a median split on clinical insight. The median, coincidentally, fell at a PANSS G12 (insight measure) score of 2. In the scoring criteria of the PANSS, 2 or less is generally considered as “not clinically impaired”. In all analyses, raw PANSS-G12 scores were used, rather than the median split represented in the figure.

Multilevel analyses confirmed our hypothesis: in both intention-to-treat (Table 2) as well as completers-analyses (Table 3), clinical insight significantly moderated the interactions on total scores of metacognition, as well as the subscales of Self-Reflectivity at follow-up and Understanding the Other’s Mind at post and follow-up. Decentration is moderated at post and follow-up in intention-to-treat, but only at post in the completers-analysis (although significant at a trend level, $p<.1$). No moderating effect was found on metacognitive Mastery. Given the nature of drop-out being slanted towards non-therapy related ($N=10$) versus possibly therapy

related (N=7), it is impossible to conclude whether the intention-to-treat or the completers analyses would provide a more accurate picture of therapy and moderation effects.

These findings demonstrate that for persons in the psychotherapy group, level of baseline insight predicts the development of metacognitive capacity significantly different from treatment-as-usual (i.e. no intervention). Figures 2 and 3 demonstrate this moderating effect: persons with high insight at baseline demonstrate improvements in metacognition in the therapy group, while low insight in the therapy group predicts very little to no improvement. Without psychotherapy (TAU), insight bears no relationship to metacognitive gains over time.

Finally, we sought to explore whether our results could be influenced by any possible overlap between the constructs of clinical insight and metacognition. Baseline metacognition scores and baseline clinical insight scores did not correlate significantly (Pearson's $r = -.14$, $p = .25$). Adding interaction effects of insights with $t1*condition*baseline$ metacognition and with $t2*condition*baseline$ metacognition) did not prove significant contributions to the model. To ensure our adjustment to group membership had no meaningful effect on the analyses, we repeated the analyses with the original assignments intact. All results remained identical vis-à-vis significance levels.

Discussion

The current study examined whether clinical insight may serve as a moderator on the effects of metacognitive psychotherapy. Our findings support our hypothesis that persons with higher clinical insight at baseline show more metacognitive gains than persons with lower clinical insight when psychotherapy is applied. Furthermore, persons with low clinical insight demonstrated little to no metacognitive improvements from the intervention. In the group of participants who received no psychotherapy whatsoever, higher or lower clinical insight had no implications for the development of metacognitive capacity.

The interaction that was found between participating in psychotherapy and insight extends our previously reported results from the RCT indicating that persons improved on metacognitive self-reflectivity at follow-up, and that there was a *possible* effect on metacognitive mastery while no effects were found on Understanding the Other's Mind or Decentration (de Jong, van Donkersgoed, et al., 2018). The current study findings suggest clinical insight moderates therapy effects on Other and Decentration, but not Self and Mastery

at post *and* follow-up. Thus, immediate effects of (metacognitive) psychotherapy are highly dependent on clinical insight at baseline.

We see, among others, two possible, related explanations for these findings. The first one relates to insight as a component of readiness for change and the second one relates to the response of the therapist to patients with low versus high insight. Considering change, if a person does not believe he or she has a disorder, taking an active role for change is doubtful. If a person lacks a coherent account of having an illness (although he or she can have a coherent account that does not comply with the medical model, see Roe et al., 2008), then reflecting together with a mental health professional on life makes very little sense to that person. While intuitively appealing, this interpretation may be an oversimplification. For some patients, this direct relationship may certainly be the case, but these patients are unlikely to ever actually show up for sessions at all. Our analyses did not show a relationship between low insight and drop-out. This may be due to low power, but it is more likely that participants who signed up for the rather long trial (40 sessions) were actually motivated for treatment, having low insight or not. Participants who were not motivated, and thus did not appear for even a single session, were re-classified in our analyses as “treatment-as-usual”; in a clinical setting, their therapy would be unlikely to ever start.

The second explanation takes into account the possible therapist’s contribution to the findings. Understanding the findings from an intersubjective framework (Hasson-Ohayon et al., 2017), the working alliance may be threatened from the beginning of the therapy when patients express low insight, causing a fundamental rift between him/her and the therapist in the formation of a joint goal. According to the intersubjective model, therapist and client may differ in their views of the client’s issues and their own roles in treatment, views that are highly related to insight into the illness (Hasson-Ohayon *et al.* 2017). It is possible that greater insight into illness means that patient and therapist agree on the diagnosis and need for treatment. This starting point may allow for productive therapeutic work to take place. This idea is supported by studies that showed therapists tend to rate the therapeutic alliance more positively with patients who display greater levels of insight (Ruchlewska, Kamperman, van der Gaag, Wierdsma, & Mulder, 2016) and agree more with patients with high insight than with patients with low insight on different aspects of the patients life (e.g. Hasson-Ohayon et al., 2011; Lysaker et al., 2012). In comparison, if a patient lacks insight, the therapist may feel an urge to provide the patient with a narrative in line with the medical model leading to unproductive arguments about whether the patient does or does not have an illness or symptoms. Going

beyond our data, we consider it a possibility worth exploring that the therapist forms higher agreement and better alliance with persons with higher insight than low insight. In other words, there may be some version of a self-fulfilling prophecy or ‘Pygmalion’ effect (Rosenthal & Jacobson, 1968) at work. There is some basis for this assumption; it has been found, for instance, that healthcare professionals are generally less optimistic about the possibility of recovery from mental illness than the general public (e.g. Hugo 2001). Patients lacking in clinical insight may cause healthcare professionals and caregivers to experience a sense of helplessness when confronted with, for instance, severe disorganization, negative symptoms or rigidly-held beliefs surrounding delusional convictions or hallucinations. This sense of helplessness may translate to less expectation for recovery and thus, less recovery. To investigate this hypothesis, we would recommend that in future studies, measures of hope(lessness), expectations of outcomes and therapeutic alliance are administered to both clients and therapists. Alternatively, future studies surrounding MERIT and insight may include a special section for low-insight clients, in which the therapist is guided towards interventions at the lowest levels of metacognitive mastery.

Based on the intersubjective model (Hasson-Ohayon et al., 2017), as well as relatively recent findings that persons with psychosis report ambivalent or even positive attitudes towards their psychotic symptoms (Moritz et al., 2015; Moritz, Favrod, et al., 2013), some adjustments could be made to the protocol. For instance, an addition could be made to the protocol where, in absence of clinical insight, the therapists are guided in exploring the illness narrative with the client. Questions which may serve as fruitful ground for joint reflection may be an explicit discussion of the patient’s views surrounding any mental difficulties they experience, and what goals are for the coming few years. This may ensure a focus, from the very first moment, on a shared reality from which to begin work on personal recovery rather than the contentious matter of symptomatic improvement when insight is absent.

Several limitations to this study should be taken into account: the sample size is modest, given how participants were divided between two conditions and insight was only measured utilizing the single PANSS G12 item. Due to the mix of drop-out due to therapist attrition and patient attrition before session 0 (we hypothesize that these patients were mainly stimulated by the prospect of €20 compensation for each measurement moment), it is difficult to say whether the strong effects in the intention-to-treat analysis or the much less strong effect in the completers analysis is the most accurate. The accuracy of the reasons for drop-out is difficult to verify, as such we maintained the strictest definition of drop-out after therapy start, namely

discontinuation of the intervention for any reason at all. It is possible that the reason of ‘doing too well’ given by some participants reflects therapy success rather than therapy rejection (Roe, Hasson-Ohayon, & Gornemann, 2016). Conversely, however, this reason as well as all the others may be more socially desirable answers obfuscating drop-out because of non-acceptance. As such, we stress that both intention-to-treat analysis *and* completers analysis warrants attention. Furthermore, with a mean years of illness of 13.5, our data may very well not generalize to first-episode patients. Therapeutic alliance measures could not be administered to clients and therapists, and as such our notions surrounding the influence of insight on the therapeutic alliance remain theoretical. Similarly, therapist adherence to the therapy manual was only ensured through post-session self-rating by the therapist and bi-weekly supervision. As such, no formal measure of adherence could be entered into the model to determine whether more or less adherence to the protocol influences therapy effects. Finally, our findings may not be generalized to other forms of psychotherapy such as cognitive-behavioral therapy.

Our findings demonstrate that psychotherapy such as MERIT may be significantly hampered by lacking clinical insight to the degree that it may be fruitful to open the discussion on whether such psychosocial interventions should be undertaken in the absence of clinical insight. We propose that efforts should be shifted, moving from interventions intending to *treat* (or ‘enhance’) clinical insight towards interventions which can be applied in the absence of clinical insight. One possibly fruitful avenue in this may be the development of training modules specifically designed for professionals who work with persons with a psychotic disorder, and which offer hands-on suggestions on how to deal with lacking insight or low metacognitive mastery.

REFERENCES

- Álvarez-jiménez, M., Gleeson, J. F., Cotton, S., Wade, D., Gee, D., Pearce, T., ... Mcgorry, P. D. (2009). Predictors of Adherence to Cognitive-Behavioural Therapy in First-Episode Psychosis, 54(10).
- Amador, X. F., Strauss, D. H., Yale, S. A., & Gorman, J. M. (1991). Awareness of illness in schizophrenia. *Schizophrenia Bulletin*, 17(1), 113–132. Retrieved from <https://doi.org/10.1093/schbul/17.1.113>
- Arnon-Ribenfeld, N., Hasson-Ohayon, I., Lavidor, M., Atzil-Slonim, D., & Lysaker, P. H. (2017). The association between metacognitive abilities and outcome measures among people with schizophrenia: A meta-analysis. *European Psychiatry*, 46(August), 33–41. Retrieved from <https://doi.org/10.1016/j.eurpsy.2017.08.002>
- Bargenquast, R., Schweitzer, R. D., & Drake, S. (2015). Reawakening reflective capacity in the psychotherapy of schizophrenia: A case study. *Journal of Clinical Psychology*, 71(2), 136–145. Retrieved from <https://doi.org/10.1002/jclp.22149>
- Bergé, D., Mané, A., Salgado, P., Cortizo, R., Garnier, C., Gomez, L., ... Pérez, V. (2016). Predictors of Relapse and Functioning in First-Episode Psychosis: A Two-Year Follow-Up Study. *Psychiatric Services*, 67(2), 227–233. Retrieved from <https://doi.org/10.1176/appi.ps.201400316>
- Buck, K. D., & George, S. E. (2016). Metacognitive Reflective and Insight Therapy for a Person Who Gained Maximal Levels of Metacognitive Capacity and Was Able to Terminate Therapy. *Journal of Contemporary Psychotherapy*, 46(4), 187–195. Retrieved from <https://doi.org/10.1007/s10879-016-9322-y>
- Charlton, C., Rasbash, J., Browne, W. J., Healy, M., & Cameron, B. (2017). MLwiN. Bristol: Centre for Multilevel Modelling, University of Bristol.
- Crumlish, N., Whitty, P., Kamali, M., Clarke, M., Browne, S., McTigue, O., ... O’Callaghan, E. (2005). Early insight predicts depression and attempted suicide after 4 years in first-episode schizophrenia and schizophreniform disorder. *Acta Psychiatrica Scandinavica*, 112(6), 449–455. Retrieved from <https://doi.org/10.1111/j.1600-0447.2005.00620.x>
- David, A. S. (1990). Insight and psychosis. *British Journal of Psychiatry*, 156(JUNE), 798–808. Retrieved from <https://doi.org/10.1080/080394899427737>
- David, A. S., Bedford, N., Wiffen, B., & Gilleen, J. (2014). Failures of metacognition and lack of insight in neuropsychiatric disorders. *The Cognitive Neuroscience of Metacognition*, 9783642451, 345–365. Retrieved from https://doi.org/10.1007/978-3-642-45190-4_15
- de Jong, S., Hasson-Ohayon, I., Donkersgoed, R., Aleman, A., & Pijnenborg, G. H. M. (2018). A qualitative evaluation of the effects of Metacognitive Reflection and Insight Therapy: ‘Living more consciously’. *Psychology and Psychotherapy: Theory, Research and Practice*, papt.12212. Retrieved from <https://doi.org/10.1111/papt.12212>
- de Jong, S., van Donkersgoed, R. J. M., Aleman, A., van der Gaag, M., Wunderink, L., Arends, J., ... Pijnenborg, M. (2016). Practical implications of metacognitively oriented psychotherapy in psychosis. *The Journal of Nervous and Mental Disease*, 204(9), 713–716. Retrieved from <https://doi.org/10.1097/NMD.0000000000000564>
- de Jong, S., van Donkersgoed, R. J. M., Pijnenborg, G. H. M., & Lysaker, P. H. (2016a).

- Metacognitive Reflection and Insight Therapy (MERIT) With a Patient With Severe Symptoms of Disorganization. *Journal of Clinical Psychology*, 72(2), 164–174. Retrieved from <https://doi.org/10.1002/jclp.22249>
- de Jong, S., van Donkersgoed, R. J. M., Timmerman, M. E., aan het Rot, M., Wunderink, L., Arends, J., ... Pijnenborg, G. H. M. (2018). Metacognitive reflection and insight therapy (MERIT) for patients with schizophrenia. *Psychological Medicine*, 1–11. Retrieved from <https://doi.org/10.1017/S0033291718000855>
- de Jong, S., van Donkersgoed, R., Pijnenborg, G. H. M., & Lysaker, P. H. (2016b). Metacognitive Reflection and Insight Therapy (MERIT) With a Patient With Severe Symptoms of Disorganization. *Journal of Clinical Psychology*, 72(2), 164–174. Retrieved from <https://doi.org/10.1002/jclp.22249>
- Dubreucq, J., Delorme, C., & Roure, R. (2016). Metacognitive Therapy Focused on Psychosocial Function in Psychosis. *Journal of Contemporary Psychotherapy*, 46(4), 197–206. Retrieved from <https://doi.org/10.1007/s10879-016-9334-7>
- Ehrlich-Ben Or, S., Hasson-Ohayon, I., Feingold, D., Vahab, K., Amiaz, R., Weiser, M., & Lysaker, P. H. (2013). Meaning in life, insight and self-stigma among people with severe mental illness. *Comprehensive Psychiatry*, 54(2), 195–200. Retrieved from <https://doi.org/10.1016/j.comppsy.2012.07.011>
- Field, A. (2013). *Discovering Statistics Using IBM SPSS Statistics* (4th ed.). Sage Publications Ltd.
- Gumley, A. I., Schwannauer, M., Macbeth, A., Fisher, R., Clark, S., Rattrie, L., ... Birchwood, M. (2014). Insight, duration of untreated psychosis and attachment in first-episode psychosis: Prospective study of psychiatric recovery over 12-month follow-up. *British Journal of Psychiatry*, 205(1), 60–67. Retrieved from <https://doi.org/10.1192/bjp.bp.113.126722>
- Hamm, J. A., & Firmin, R. L. (2016). Disorganization and Individual Psychotherapy for Schizophrenia: A Case Report of Metacognitive Reflection and Insight Therapy. *Journal of Contemporary Psychotherapy*, 46(4), 227–234. Retrieved from <https://doi.org/10.1007/s10879-016-9326-7>
- Hamm, J. A., Hasson-Ohayon, I., Kukla, M., & Lysaker, P. H. (2013). Individual psychotherapy for schizophrenia: trends and developments in the wake of the recovery movement. *Psychology Research and Behavior Management*, 6, 45–54. Retrieved from <https://doi.org/10.2147/PRBM.S47891>
- Hasson-Ohayon, I. (2018). Overlap and distinction between measures of insight and self-stigma. *Psychiatry Research*, 266(May), 47–64. Retrieved from <https://doi.org/10.1016/j.psychres.2018.05.035>
- Hasson-Ohayon, I., Avidan-Msika, M., Mashlach-Eizenberg, M., Kravetz, S., Rozencwaig, S., Shalev, H., & Lysaker, P. H. (2015). Metacognitive and social cognition approaches to understanding the impact of schizophrenia on social quality of life. *Schizophrenia Research*, 161(2–3), 386–391. Retrieved from <https://doi.org/10.1016/j.schres.2014.11.008>
- Hasson-Ohayon, I., Kravetz, S., & Lysaker, P. H. (2017). The Special Challenges of Psychotherapy with Persons with Psychosis: Intersubjective Metacognitive Model of Agreement and Shared Meaning. *Clinical Psychology and Psychotherapy*, 24(2), 428–

440. Retrieved from <https://doi.org/10.1002/cpp.2012>

- Hasson-Ohayon, I., Kravetz, S., Meir, T., & Rozenzweig, S. (2009). Insight into severe mental illness, hope, and quality of life of persons with schizophrenia and schizoaffective disorders. *Psychiatry Research*, 167(3), 231–238. Retrieved from <https://doi.org/10.1016/j.psychres.2008.04.019>
- Hasson-Ohayon, I., Kravetz, S., Roe, D., David, A. S., & Weiser, M. (2006). Insight into psychosis and quality of life. *Comprehensive Psychiatry*, 47(4), 265–269. Retrieved from <https://doi.org/10.1016/j.comppsy.2005.08.006>
- Hasson-Ohayon, I., Roe, D., Kravetz, S., Levy-Frank, I., & Meir, T. (2011). The relationship between consumer insight and provider-consumer agreement regarding consumer's quality of life. *COMMUNITY MENTAL HEALTH JOURNAL*, 47(5), 607–612. Retrieved from <https://doi.org/10.1007/s10597-011-9380-2>
- Hillis, J. D., Leonhardt, B. L., Vohs, J. L., Buck, K. D., Salvatore, G., Popolo, R., ... Lysaker, P. H. (2015). Metacognitive Reflective and Insight Therapy for People in Early Phase of a Schizophrenia Spectrum Disorder. *Journal of Clinical Psychology*, 71(2), 125–135. Retrieved from <https://doi.org/10.1002/jclp.22148>
- Hugo, M. (2001). Mental health professionals' attitudes towards people who have experienced a mental health disorder. *Journal of Psychiatric and Mental Health Nursing*, 8(5), 419–425. Retrieved from <https://doi.org/10.1046/j.1351-0126.2001.00430.x>
- Hui, C. L. M., Poon, V. W. Y., Ko, W. T., Miao, H. Y., Chang, W. C., Lee, E. H. M., ... Chen, E. Y. H. (2015). Risk factors for antipsychotic medication non-adherence behaviors and attitudes in adult-onset psychosis. *Schizophrenia Research*, 174(1–3), 144–149. Retrieved from <https://doi.org/10.1016/j.schres.2016.03.026>
- Kay, S. R., Fiszbein, a., & Opler, L. a. (1987). The Positive and Negative Syndrome Scale (PANSS) for Schizophrenia. *Schizophrenia Bulletin*, 13(2), 261–276. Retrieved from <https://doi.org/10.1093/schbul/13.2.261>
- Kemp, R., & David, A. S. (1997). Insight and Compliance. In *Treatment compliance and the therapeutic alliance*. Harwood Publishers.
- Kvrgic, S., Cavelti, M., Beck, E.-M. M., Rüsch, N., Vauth, R., Ruesch, N., & Vauth, R. (2013). Therapeutic alliance in schizophrenia: The role of recovery orientation, self-stigma, and insight. *Psychiatry Research*, 209(1), 15–20. Retrieved from <https://doi.org/10.1016/j.psychres.2012.10.009>
- Lacro, J. P., Dunn, L. B., Dolder, C. R., Leckband, S. G., Jeste, D. V., Pharm, D., & Ph, R. (2002). Prevalence of and risk factors for medication nonadherence in patients with schizophrenia: a comprehensive review of recent literature. *J Clin Psychiatry*, 63(10), 892–909. Retrieved from <https://doi.org/http://dx.doi.org/10.4088/JCP.v63n1007>
- Lincoln, T. M., Lüllmann, E., & Rief, W. (2007). Correlates and long-term consequences of poor insight in patients with schizophrenia. A systematic review. *Schizophrenia Bulletin*, 33(6), 1324–1342. Retrieved from <https://doi.org/10.1093/schbul/sbm002>
- Lysaker, P. H., & Buck, K. D. (2006). Narrative enrichment in the psychotherapy for persons with schizophrenia: a single case study. *Issues in Mental Health Nursing*, 27(3), 233–47. Retrieved 13 November 2012 from <https://doi.org/10.1080/01612840500502676>

- Lysaker, P. H., Buck, K. D., & Ringer, J. (2007). The recovery of metacognitive capacity in schizophrenia across 32 months of individual psychotherapy: A case study. *Psychotherapy Research*, 17(6), 713–720. Retrieved 26 February 2012 from <https://doi.org/10.1080/10503300701255932>
- Lysaker, P. H., Buck, K. D., Salvatore, G., Popolo, R., & Dimaggio, G. (2009). Lack of awareness of illness in schizophrenia: conceptualizations, correlates and treatment approaches. *Expert Review of Neurotherapeutics*, 9(7), 1035–43. Retrieved from <https://doi.org/10.1586/ern.09.55>
- Lysaker, P. H., Carcione, A., Dimaggio, G., Johannesen, J. K., Nicolò, G., Procacci, M., & Semerari, A. (2005). Metacognition amidst narratives of self and illness in schizophrenia: associations with neurocognition, symptoms, insight and quality of life. *Acta Psychiatrica Scandinavica*, 112(1), 64–71. Retrieved 13 July 2011 from <https://doi.org/10.1111/j.1600-0447.2005.00514.x>
- Lysaker, P. H., & Dimaggio, G. (2014). Metacognitive Capacities for Reflection in Schizophrenia: Implications for Developing Treatments. *Schizophrenia Bulletin*, 40(3), 487–491. Retrieved 20 March 2014 from <https://doi.org/10.1093/schbul/sbu038>
- Lysaker, P. H., Hasson-Ohayon, I., Kravetz, S., Kent, J. S., & Roe, D. (2012). Self perception of empathy in schizophrenia: Emotion recognition, insight, and symptoms predict degree of self and interviewer agreement. *Psychiatry Research*, 206(2–3), 146–150. Retrieved from <https://doi.org/10.1016/j.psychres.2012.10.021>
- Lysaker, P. H., & Klion, R. E. (2017). *Recovery, Meaning-Making, and Severe Mental Illness: A Comprehensive Guide to Metacognitive Reflection and Insight Therapy*. (Routledge,Ed.) (1st ed.). New York: Routledge. Retrieved from <https://books.google.nl/books?id=dlk6DwAAQBAJ>
- Lysaker, P. H., Pattison, M. L., Leonhardt, B. L., Phelps, S., & Vohs, J. L. (2018). Insight in schizophrenia spectrum disorders: relationship with behavior, mood and perceived quality of life, underlying causes and emerging treatments. *World Psychiatry*, 17(1), 12–23. Retrieved from <https://doi.org/10.1002/wps.20508>
- Lysaker, P. H., Roe, D., & Yanos, P. T. (2007). Toward understanding the insight paradox: Internalized stigma moderates the association between insight and social functioning, hope, and self-esteem among people with schizophrenia spectrum disorders. *Schizophrenia Bulletin*, 33(1), 192–199. Retrieved from <https://doi.org/10.1093/schbul/sbl016>
- Lysaker, P. H., Vohs, J., Hamm, J. A. J. A., Kukla, M., Minor, K. S. K. S., de Jong, S., ... Dimaggio, G. (2014). Deficits in metacognitive capacity distinguish patients with schizophrenia from those with prolonged medical adversity. *Journal of Psychiatric Research*, 55(1), 126–132. Retrieved 12 May 2014 from <https://doi.org/10.1016/j.jpsychires.2014.04.011>
- Lysaker, P. H., Vohs, J. L., Hasson-Ohayon, I., Kukla, M., Wierwille, J., & Dimaggio, G. (2013). Depression and insight in schizophrenia: comparisons of levels of deficits in social cognition and metacognition and internalized stigma across three profiles. *Schizophrenia Research*, 148(1–3), 18–23. Retrieved 18 November 2013 from <https://doi.org/10.1016/j.schres.2013.05.025>
- McEvoy, J. P., Freter, S., Everett, G., Geller, J. L., Appelbaum, P., Joy Apperson, L., & Roth,

- L. (1989). Insight and the clinical outcome of schizophrenic patients. *Journal of Nervous and Mental Disease*. Retrieved from <https://doi.org/10.1097/00005053-198901000-00008>
- Moritz, S., Favrod, J., Andreou, C., Morrison, A. P., Bohn, F., Veckenstedt, R., ... Karow, A. (2013). Beyond the usual suspects: Positive attitudes towards positive symptoms is associated with medication noncompliance in psychosis. *Schizophrenia Bulletin*, 39(4), 917–922. Retrieved from <https://doi.org/10.1093/schbul/sbs005>
- Moritz, S., & Lysaker, P. H. (2018). Metacognition – What did James H. Flavell really say and the implications for the conceptualization and design of metacognitive interventions. *Schizophrenia Research*, (June). Retrieved from <https://doi.org/10.1016/j.schres.2018.06.001>
- Moritz, S., Rietschel, L., Veckenstedt, R., Bohn, F., Schneider, B. C., Lincoln, T. M., & Karow, A. (2015). The other side of “madness”: frequencies of positive and ambivalent attitudes towards prominent positive symptoms in psychosis. *Psychosis*, 7(1), 14–24. Retrieved from <https://doi.org/10.1080/17522439.2013.865137>
- Moritz, S., Veckenstedt, R., Bohn, F., Hottenrott, B., Scheu, F., Randjbar, S., ... Roesch-Ely, D. (2013). Complementary group Metacognitive Training (MCT) reduces delusional ideation in schizophrenia. *Schizophrenia Research*, 151(1–3), 61–9. Retrieved 14 August 2014 from <https://doi.org/10.1016/j.schres.2013.10.007>
- Pijnenborg, G. H. M., Timmerman, M. E., Derks, E. M., Fleischhacker, W. W., Kahn, R. S., & Aleman, A. (2015). Differential effects of antipsychotic drugs on insight in first episode schizophrenia: Data from the European First-Episode Schizophrenia Trial (EUFEST). *European Neuropsychopharmacology*, 25(6), 808–816. Retrieved from <https://doi.org/10.1016/j.euroneuro.2015.02.012>
- Rabin, S. J., Hasson-Ohayon, I., Avidan, M., Rozenzweig, S., Shalev, H., & Kravetz, S. (2014). Metacognition in schizophrenia and schizotypy: relation to symptoms of schizophrenia, traits of schizotypy and Social Quality of Life. *The Israel Journal of Psychiatry and Related Sciences*, 51(1), 44–53. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/24858634>
- Roe, D., Hasson-Ohayon, I., & Gornemann, M. I. (2016). Reasons for Discontinuing Attendance at a Group Intervention Among People With Serious Mental Illness. *Psychiatric Services*, 67(9), 1043–1043. Retrieved from <https://doi.org/10.1176/appi.ps.201600172>
- Roe, D., Hasson-Ohayon, I., Kravetz, S., Yanos, P. T., & Lysaker, P. H. (2008). Call it a monster for lack of anything else: Narrative insight in psychosis. *Journal of Nervous and Mental Disease*, 196(12), 859–865. Retrieved from <https://doi.org/10.1097/NMD.0b013e31818ec6e7>
- Rosenthal, R., & Jacobson, L. (1968). Pygmalion in the classroom. *The Urban Review*, 3(1), 16–20. Retrieved from <https://doi.org/10.1007/BF02322211>
- Ruchlewska, A., Kamperman, A. M., van der Gaag, M., Wierdsma, A. I. A. I., & Mulder, N. C. L. L. (2016). Working Alliance in Patients with Severe Mental Illness Who Need a Crisis Intervention Plan. *Community Mental Health Journal*, 52(1), 102–108. Retrieved from <https://doi.org/10.1007/s10597-015-9839-7>
- Sanz, M., Constable, G., Lopez-Ibor, I., Kemp, R., & David, A. S. (1998). A comparative

study of insight scales and their relationship to psychopathological and clinical variables. *Psychological Medicine*, 28(2), 437–446. Retrieved from <https://doi.org/10.1017/S0033291797006296>

- Schimmelmann, B. G., Conus, P., Schacht, M., McGorry, P., & Lambert, M. (2006). Predictors of service disengagement in first-admitted adolescents with psychosis. *Journal of the American Academy of Child and Adolescent Psychiatry*, 45(8), 990–999. Retrieved from <https://doi.org/10.1097/01.chi.0000223015.29530.65>
- Snijders, T. A. B., & Bosker, R. J. (2000). *Multilevel Analysis: An Introduction to Basic and Advanced Multilevel Modeling Second Edition*. London: Sage.
- Wells, A. (2009). *Metacognitive Therapy for Anxiety and Depression*. New York: The Guilford Press.
- Wittorf, A., Jakobi, U., Bechdolf, A., Müller, B., Sartory, G., Wagner, M., ... Klingberg, S. (2009). The influence of baseline symptoms and insight on the therapeutic alliance early in the treatment of schizophrenia. *European Psychiatry*, 24(4), 259–267. Retrieved from <https://doi.org/10.1016/j.eurpsy.2008.12.015>
- Yen, C.-F., Chen, C.-S., Ko, C.-H., Yeh, M.-L., Yang, S.-J., Yen, J.-Y., ... Wu, C.-C. (2005). Relationships between insight and medication adherence in outpatients with schizophrenia and bipolar disorder: Prospective study. *Psychiatry and Clinical Neurosciences*, 59(4), 403–409. Retrieved from <https://doi.org/10.1111/j.1440-1819.2005.01392.x>

Table 1
Comparison of demographic variables between the groups

Variable	Control (n=40)	MERIT (n=30)	p T-test / χ^2
Age in years (SD)	38.18 (10.74)	42.47 (12.05)	0.121
Gender			
Male	30	11	0.307
Female	10	19	
Diagnosis			
Schizophrenia	26	21	0.798
Schizoaffective	14	9	
Yrs of illness, mean (SD)	12.08 (9.15)	16.10 (12.15)	0.16

Table 2
Fixed and random effects on the moderation of insight on outcomes between the groups – intention to treat

	Self	Other	Decentr.	Mastery	MAS- Total
Parameter	Beta (SE)	Beta (SE)	Beta (SE)	Beta (SE)	Beta (SE)
Fixed effects					
Time factor					
Baseline	4.15(0.14)	2.60(0.09)	1.04(0.06)	3.14(0.15)	10.93 (0.35)
Post time-effect ^a	0.24(0.23)	0.03(0.16)	0.07(0.11)	0.89(0.24)	1.26(0.55)
Post*Condition ^a	1.05(0.58)	0.95(0.40)	0.69(0.27)	0.50(0.62)	3.04(1.42)
Follow-up time-effect ^b	-0.01(0.24)	-0.04(0.17)	0.17(0.11)	0.84(0.26)	0.10(0.59)
Follow-up*Condition ^b	2.63(0.84)	1.58(0.58)	0.78(0.39)	1.70(0.89)	6.43(2.05)
Insight * Condition * Post	-0.3(0.18)	-0.24(0.12) [†]	-0.22(0.08)**	-0.26(0.19)	-0.99(0.44)*
Insight * Condition * FU	-0.52(0.26)*	-0.44(0.18)*	-0.29(0.12)*	-0.48(0.28) [†]	1.67(0.63)**
Random effects					
<i>Variances of</i>					
Level 2 – intercept	0.43(0.15)	0.18(0.07)	0.09(0.03)	0.73(0.21)	3.55(1.06)
Level 1 – residual	0.87(0.13)	0.43(0.07)	0.19(0.03)	0.94(0.14)	5.00(0.75)

^aPost effect: Difference between T0 and T1 (TAU is reference category)

^bFollow-up effect: Difference between T0 and T2 (TAU is reference category)

** = significant at p<.01, one-tailed

* = significant at p<.05, one-tailed

[†] = trend (p<.1)

Table 3

Fixed and random effects on the moderation of insight on outcomes between the groups – completers analysis

	Self	Other	Decentr.	Mastery	MAS-Total
Parameter	Beta (SE)	Beta (SE)	Beta (SE)	Beta (SE)	Beta (SE)
Fixed effects					
Time factor					
Baseline	4.07(0.15)	2.57(0.11)	1.02(0.07)	3.20(0.15)	10.85(0.37)
Post time-effect ^a	0.29(0.23)	0.05(0.17)	0.08(0.10)	0.86(0.23)	1.30(0.54)
Post*Condition ^a	1.58(0.61)	1.19(0.44)	0.95(0.28)	0.77(0.61)	4.24(1.49)
Follow-up time-effect ^b	0.03(0.24)	-0.01(0.18)	0.18(0.11)	0.81(0.24)	1.04(0.58)
Follow-up*Condition ^b	2.96(0.84)	1.63(0.61)	0.73(0.39)	1.74(0.84)	6.75(2.03)
Insight * Condition * Post	-0.38(0.19) [†]	-0.32(0.14)*	-0.27(0.09)**	-0.27(0.20)	-1.17(0.47)*
Insight * Condition * FU	-0.56(0.26)*	-0.41(0.19)*	-0.23(0.12) [†]	-0.32(0.27)	-1.44(0.64)*
Random effects					
<i>Variances of</i>					
Level 2 – intercept	0.37(0.15)	0.20(0.08)	0.11(0.04)	0.55(0.18)	3.26(1.05)
Level 1 – residual	0.86(0.14)	0.46(0.07)	0.17(0.03)	0.81(0.13)	4.76(0.75)

^aPost effect: Difference between T0 and T1 (TAU is reference category)

^bFollow-up effect: Difference between T0 and T2 (TAU is reference category)

** = significant at $p < .01$, one-tailed

* = significant at $p < .05$, one-tailed

[†] = trend ($p < .1$)

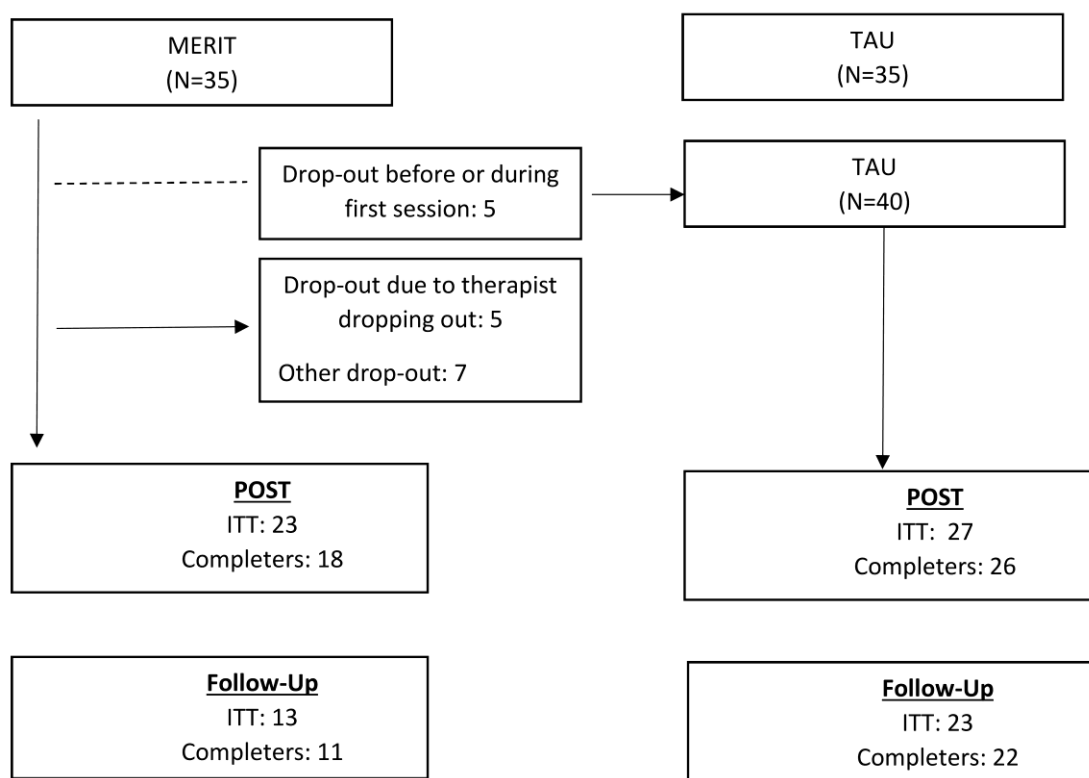


Figure 1

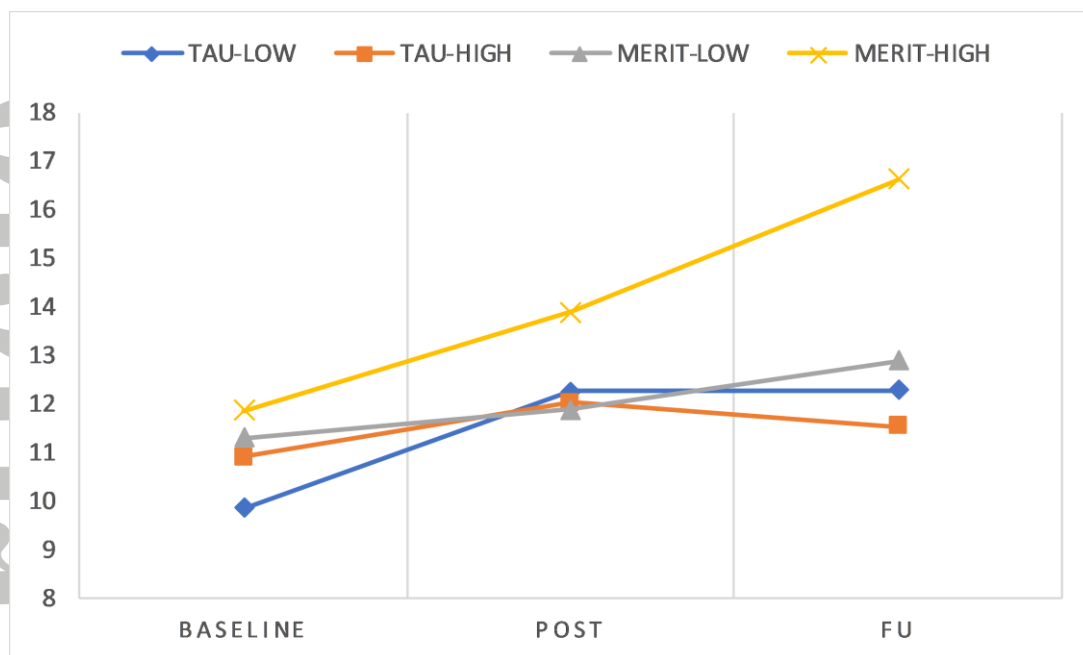


Figure 2

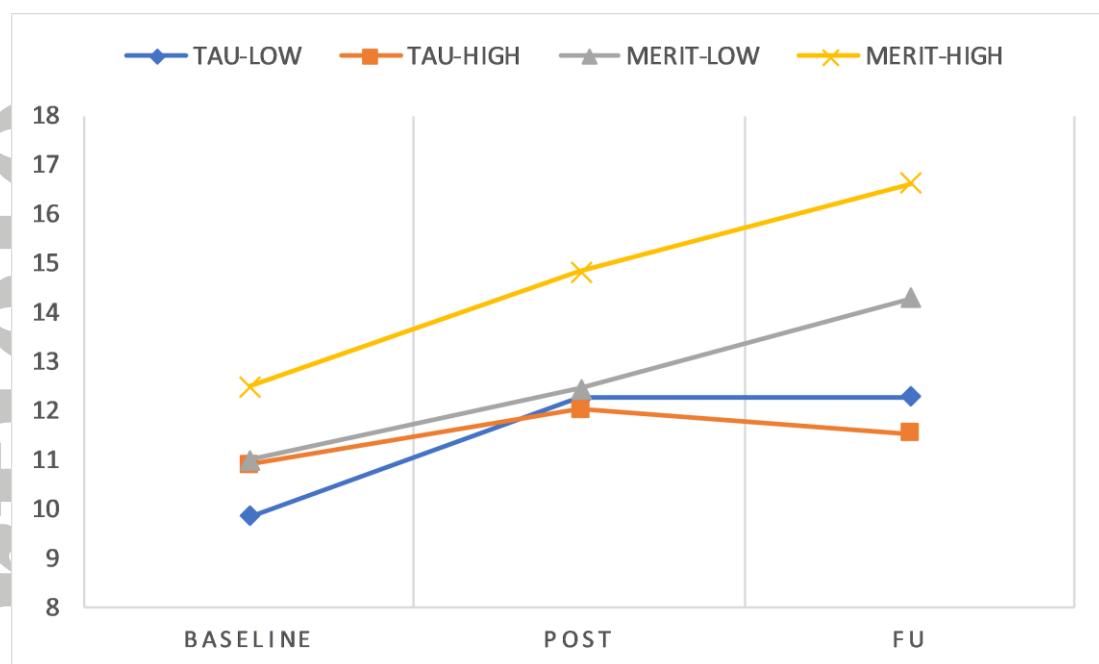


Figure 3