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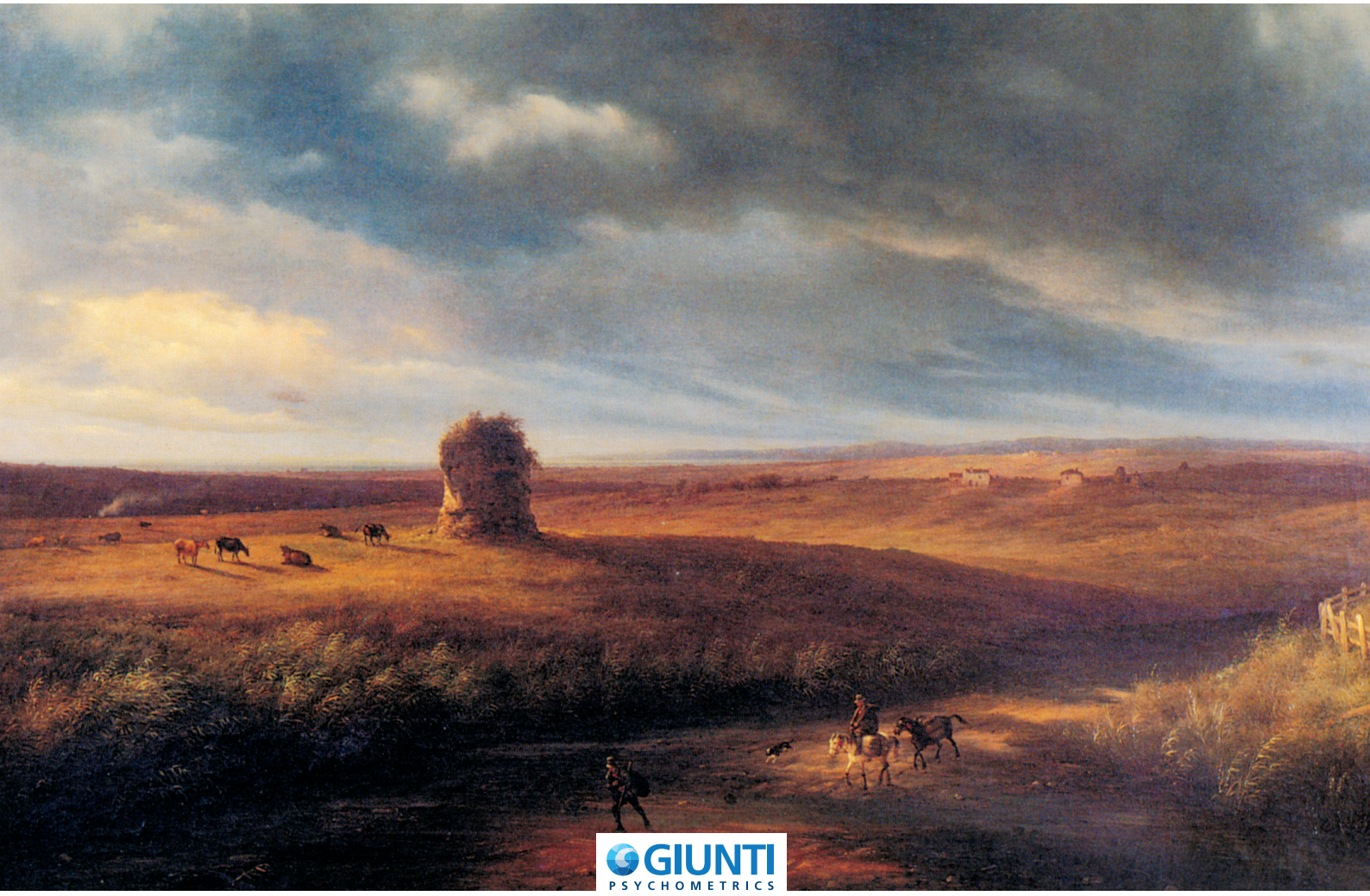
Metacognition and psychosis: Assessment, conceptualization, and treatment



GIUNTI PSYCHOMETRICS

Metacognition and psychosis: Assessment, conceptualization, and treatment

Simone Cheli, Paul H. Lysaker (Guest Eds.)

Editorial

People who struggle with severe mental disorders such as psychosis describe recurring difficulties perceiving meaning and continuity to their experience. The way they understand and relate to themselves and others influences the course of the disorder and their subsequent interpretations of their experience. Recent advances in psychosis have progressively conceptualized these altered subjective and inter-subjective experiences as the result of an impaired metacognitive capacity (Hasson-Ohayon, Goldzweig, Lavi-Rotenberg, Luther & Lysaker, 2018; Lysaker et al., 2019). Metacognition in this work is a multifaceted and complex construct referring to the ability to construe a nuanced and integrated sense of one's own and other's mental states (Lysaker et al., 2011; Semerari et al., 2003). Although there are numerous intersections and overlaps with constructs such as mentalization and social cognition, metacognition seems to be characterized by an architectural organization of experience that is made up of different functions and a hierarchical structure (Lysaker et al., 2021). While on the one hand an impairment in one or more metacognitive functions can exacerbate impairment in psychosocial function and symptoms by reducing the understanding of oneself and others (Hasson-Ohayon, Gumley, McLeod & Lysaker, 2020), on the other hand a treatment focused on metacognition may promote a recovery of the ability to deal with the everyday psychological challenges (Lysaker et al., 2018).

In the last few years, a group of diverse forms of metacognitively oriented psychotherapy (MOP) emerged and reported preliminary but still encouraging evidence in conceptualizing and treating psychosis (Lysaker et al., 2018). In this special issue, we focus on those approaches that converge on a vision of metacognition as a dynamic architecture that includes different functions that, in turn, can be differently impaired. We hypothesize that such a nuanced and tailored conceptualization may foster a recovery-oriented approach along the continuum of schizotypy (Cheli, 2020; Hamm et al., 2017).

In the opening paper, Cheli and colleagues (Cheli, Enzo, Chiarello & Cavalletti, 2021) present the Italian linguistic and psychometric validation of the assessment procedure developed by Paul H. Lysaker. That is, the *Metacognitive Assessment Scale – Abbreviated (MAS-A)* for the transcripts of the Indiana Psychiatric Illness Interview (IPII). In two parallel studies, authors describe the inter-rater reliability, construct and predictive validity of both versions of IPII (for clinical and non-clinical samples, respectively). In the second paper Lysaker and colleagues (2021) summarize the state of the art of metacognitive reflection and insight therapy (MERIT) for psychosis (Lysaker & Klion, 2018). MERIT is a manualized individual procedure to improve metacognition in people with schizophrenia or psychotic spectrum disorders, which is based on eight elements which the therapist attempts to introduce each session. Lysaker et al. (2021) describe the rationale of the treatment and review evidence supporting its effectiveness.

In the following paper, Lemmers-Jansen and Moritz (2021) review the structure and the evidence of the metacognitive training (MCT) for psychosis. They discuss the pros and cons of one of the most interesting attempts to develop a group intervention for those diagnosed with psychosis. MCT consists of two cycles of 8 modules (plus two additional modules) aimed at reducing psychotic symptoms. Finally, in the last paper Ottavi and colleagues (Ottavi, Pasinetti, Popolo & Dimaggio, 2021) describe one of the group versions of metacognitive and interpersonal therapy (MIT), that is the Metacognition-Oriented Social Skills Training (MOSST). MOSST is a recently developed intervention aimed at stimulating the awareness of both the cognitive and the emotional aspects during social exchanges as well as promoting both third-person and first-person mindreading at the same time.

We hope that this collection of papers will foster the application of metacognitively oriented perspectives to both assessment and treatment of those diagnosed with psychosis. We are convinced that a dynamic and individualized understanding of metacognitive functioning can facilitate the conceptualization of maintaining mechanisms of suffering, as well as promote a progressive recovery that is consistent with patient's needs and expectations.

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Metacognitive Assessment Scale – Abbreviated and Indiana Psychiatric Illness Interview: Psychometric validation in two Italian clinical and non-clinical samples

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ABSTRACT. Lo scopo di questa ricerca è presentare la validazione linguistica e psicometrica in italiano della procedura sviluppata da Paul H. Lysaker per valutare la metacognizione. In due diversi studi confermiamo rispettivamente l'affidabilità della *Metacognitive Assessment Scale – Abbreviated (MAS-A)* e della versione clinica e non clinica della Indiana Psychiatric Illness Interview (IPII). Nello Studio 1 abbiamo reclutato un campione (*n* = 48) di persone avente diagnosi di gravi disturbi di salute mentale (disturbo di personalità; episodio psicotico breve). Tutti i soggetti sono stati valutati attraverso la versione clinica della IPII ed altre misure pertinenti concorrenti. Nello Studio 2 abbiamo reclutato adulti sani (*n* = 45) che sono stati intervistati attraverso la versione non clinica della IPII. La metacognizione è stata valutata in entrambi i campioni utilizzando la MAS-A. La traduzione italiana di entrambe le versioni della IPII, clinica e non clinica, ha mostrato una buona affidabilità tra valutatori. I punteggi MAS-A hanno riportato una correlazione significativa con altri punteggi concorrenti. I nostri risultati confermano che IPII e MAS-A insieme consentono una comprensione sfumata e su misura del livello di funzionamento metacognitivo in campioni sia clinici che non clinici. Ulteriori ricerche potrebbero confermare la validità predittiva della procedura in campioni più grandi.

SUMMARY. The aim of this research is to present the linguistic and psychometric validation in Italian of the procedure developed by Paul H. Lysaker to assess metacognition. In two different studies we confirm the reliability of Metacognitive Assessment Scale – Abbreviated (MAS-A) and of clinical and non-clinical version of Indiana Psychiatric Illness Interview (IPII), respectively. In Study 1 we recruited a sample (n = 48) of persons diagnosed with severe mental health disorders (personality disorder; brief psychotic episode). All the subjects were assessed through the clinical version of IPII and other concurrent relevant measures. In Study 2 we recruited healthy adults (n = 45) who were interviewed through the non-clinical version of IPII. Metacognition was then scored in both samples using MAS-A. The Italian translation of both clinical and non-clinical version of IPII showed a good inter-rater reliability. MAS-A scores reported a significant correlation with other concurrent scores. Our results confirm that IPII and MAS-A jointly allow a nuanced and tailored understanding of the level of metacognitive functioning in both clinical and non-clinical samples. Further research may confirm the predictive validity of the procedure in larger samples.

Keywords: *Indiana Psychiatric Illness Interview, Personality disorder, Psychosis, Metacognition, Metacognitive Assessment Scale-Abbreviated*

INTRODUCTION

Severe mental disorders such as schizophrenia and personality disorders (PDs) are characterized by an impairment in the ability of construe a nuanced, complex, integrated sense of oneself and others (Lysaker, Hamm, Hasson-Ohayon, Pattison & Leonhardt, 2018). Many authors claim that these multifaceted psychopathological manifestations may be better understood through the lens of metacognition (Carcione et al., 2019; Lysaker et al., 2019). The construct of metacognition has been differently used in the last 50 years, but generally refers to the process of thinking the thinking itself, both the one of mine and the one of the others (Moritz & Lysaker, 2018). Studies on autism and schizophrenia deeply explored this construct and formulated the hypothesis that the metacognitive impairments (as the inability to make sense of one own's and other's mental states) stand at the core of these disorders (Baron-Cohen, Leslie & Frith, 1985; Frith, 1992). Early studies on what later evolved as metacognitive interpersonal therapy (MIT) explored how different patterns of metacognitive functions may operate separately and may be linked to specific categorical disorders or psychopathological dimensions (Carcione, Semerari, Dimaggio & Nicolò, 2005; Dimaggio, Semerari, Carcione, Nicolò & Procacci, 2007; Semerari et al., 2003).

Antonio Semerari and colleagues progressively formulated and tested a few tools to assess metacognition and its functions. A first procedure to assess metacognition in transcripts of psychotherapy sessions, namely *SVaM – Scala di Valutazione della Metacognizione (Metacognitive Assessment Scale – MAS*), focused on three dimensions (Carcione, Falcone, Magnolfi & Manaresi, 1997): Self-reflectiveness (i.e. the capacity to understand one's own mental states); Awareness of other's mind (i.e. the capacity to understand the other's mental states, and specifically Decentering as the capacity to distinguish the ones of the other and the one of mine); Mastery (i.e. the capacity to cope with psychological challenges). Each scale consists of a series of capacities which are arranged in hierarchical order, such that once a capacity is rated as not attained, no higher capacities should be possible. A standard interview procedure was later developed as a rapid tool to assess metacognition before a treatment starts: Intervista per la Valutazione della Metacognizione – IVaM (Semerari et al., 2008) later translated in English as Metacognitive Assessment Interview – MAI (Semerari et al., 2012). Four dimensions were initially defined and assessed: Monitoring (i.e. 9 items about the capacity to recognize emotions and thoughts referred to a mental state); Differentiating (i.e. 13 items to evaluate how much the person is able to distinguish reality and fantasy and recognize that his/her perspective is questionable); Integrating (i.e. 8 items related to understanding the transitions between mental states); Decentration (i.e. 8 items aimed at making the person reflect on the mental states of the other). Factor analysis did not confirm the existence of 4 separated domains, but rather of two low-order scales (i.e. Self and Other) and a high-order scale referring to the broad construct of metacognition (Semerari et al., 2012).

These studies confirmed the clinical and theoretical validity of the construct of metacognition as formulated by Semerari, but at the same time the need for implementing the assessment procedures. Thus, Paul H. Lysaker revised the MAS scoring procedure and replaced MAI with a structured interview already validated on people diagnosed with severe mental disorders. First, a new scoring system was created and then tested in clinical samples, that is the *Metacognition Assessment Scale – Abbreviated* form, that is MAS-A (Lysaker et al., 2005). The MAS-A contains the four original scales: "Understanding of one's own mind" or the ability to think about one's own mental states (9 levels); "Understanding of others' minds," or the ability to think about others' mental states (8 levels); "Decentration" or seeing the world as existing with others having independent motives (3 levels); and "Mastery" or the ability to implement effective strategies in order to cope with problems (9 levels). All four of the scales are reviewed individually after the interview and the rater assigns for each scale one point for each function on each scale that the rater judges the participant accomplished in the transcript. Finally, each subscale is afforded a score which suggests the level of metacognition in that domain. The individual subscales can be aggregated by summing their single scores to create a total score with a range of 0 to 29. MAS-A also allows for the provision of a .5 or half point in cases where it seems some of the intent of the function was met but not fully.

Instead of MAI, the procedure developed by Lysaker suggests the use of the Indiana Psychiatric Illness Interview – IPII (Lysaker, Clements, Plascak-Hallberg, Knipscheer & Wright, 2002). IPII is a psychiatric interview specifically developed to investigate the level of insight in patients diagnosed with severe mental disorders and more specifically the level of coherence and integration in their narratives of

their own life stories. Although not originally outlined to assess metacognition, IPII offers a very consistent background and robust psychometric validation. The interview procedure is individual and is divided into five sections: the first is aimed at establishing a relationship with the patient and asking about the patient's story of life; the second investigates whether and in what terms he/she recognizes his/her disorder; the third instead investigates the awareness of the effects of the disorder on the person's life; the fourth explores the impact of the disorder on daily choices; the fifth tries to understand how the person sees him/herself in the future. The original procedure (which provided for a specific rating on the coherence of the narratives) was modified by inserting the MAS-A as the scoring system. More recently, a non-clinical version of IPII has been developed so as to explore level of metacognition through MAS-A in healthy adults. The non-clinical version arose from the need to compare clinical samples with healthy subjects and replace the issue of mental disorder with non-clinically significant psychological distress.

The general procedure of MAS-A and IPII has been tested in large samples of persons diagnosed with severe mental disorders such as PD, schizophrenia, early psychosis and autism-spectrum disorders (Cheli, 2020; De Jong et al., 2019; Hasson-Ohayon et al., 2015; Lysaker et al., 2018). It has also been applied in different languages such as in Hebrew (Rabin et al., 2014), German (Bröcker et al., 2017), Spanish (Inchausti et al., 2017), and Russian (Lysaker et al., 2020).

Since in Italy MAS-A had been applied to date only in the form of a non-validated translation, we outlined a linguistic and psychometric validation of MAS-A, IPII clinical version and IPII non-clinical version according to usual procedures (Chan, 2014). In Study 1 we tested the clinical version of the IPII, while in Study 2 the non-clinical version. In both studies, the scoring system was MAS-A.

STUDY 1

Study 1: Sample

We recruited 48 consecutive patients diagnosed with either a PD (n = 32) or a brief psychotic episode (BPE; n = 16), in accord with DSM-5 diagnostic criteria (American Psychiatric Association, 2013). The male to female ratio was almost equal to 1:1, and mean age was 26.83 (see Table 1). Inclusion criteria were: (i) to be diagnosed with either PD or BPE in the last 1 week; (ii) to able to read and sign the inform consent form. Exclusion criteria were: (i) not being an Italian mother tongue; (ii) to be diagnosed with either a neurodevelopmental or neurological disorder; (iii) being under psychopharmacological or psychosocial treatment. The study was approved by the Ethical Committee of Tages Onlus (Ref. No. 03-120919).

Study 1: Measures

- *Beck Cognitive Insight Scale (BCIS*). The BCIS is a 15-item scale aimed at assessing the level of cognitive insight in patients diagnosed with psychosis (Beck et al., 2004), even it has been applied on several disorders. BCIS is composed of two subscales, of which we have only used the first in the present study: self-reflectiveness (BCIS-SR) and self-certainty (BCIS-C). Higher values refer to lower insight.
- *Indiana Psychiatric Illness Interview (IPII*). IPII is a semi-structured individual interview aimed at assessing illness narrative (Lysaker et al., 2002). It generally lasts between 30 and 90 minutes and can be typed verbatim during the interview or taped and later transcribed. IPII is divided conceptually in five sections aimed at exploring how patients describes their life and their course of illness. The original version included a scoring system for assessing the narrative coherence, in the present study as suggested by Lysaker such a score is replaced by MAS-A.
- *Metacognitive Assessment Scale – Abbreviated* (*MAS-A*; Lysaker et al., 2005). It is a scoring system for the assessment of metacognition. It comprises four scales that can be scored on specific levels of functioning: Self-reflectivity (score ranging from 0 to 9), Understanding others' mind (score ranging from 0 to 7), Decentration (score ranging from 0 to 3), and Mastery (score ranging from 0 to 9). The individual subscales can be summed to create a total score with a range of 0 to 28. The scoring system was previously translated by the first author of this paper for the Italian version of the manual of metacognitive reflection and insight therapy (MERIT), that is the Lysaker's protocol for treating severe mental disorders (Lysaker & Klion, 2019).
- *Structured Clinical Interview for the DSM-5 Alternative Model for Personality Disorders* (*SCID-5-AMPD*; Bender et al., 2018). It is a semi-structured diagnostic interview for the assessment of the personality pathology as presented in the AMPD. It comprises three modules allowing to

Table 1 – Descriptives of Sample 1 (Study 1)

Sample	48
Age	26.83 (*SD* = 4.28)
Sex	M = 22 (54.84%) F = 26 (54.16%)
Education	
Middle School or less	1 (2.08%)
High School	36 (75.01%)
College	10 (20.83%)
Advanced Degree	1 (2.08%)
Primary diagnosis	
Personality Disorder	32 (66.66%)
Brief Psychotic Episode	16 (33.34%)

score the Global Level of Personality Functioning (GLPF, ranging from 0 to 4), the 5 traits domains and the 25 traits facets, the six specific personality disorders.

Study 1: Procedure and statistical analysis

A first version of Italian IPII was translated by a researcher together with an English mother tongue. Then, another English mother tongue back-translated the first Italian version. Discrepancies between the back-translation and the original English version were discussed and solved by the research team together with the developer of both MAS-A and IPII (i.e. Paul H. Lysaker). Finally, the second version of Italian IPII was tested in a focus group (n = 5) of patients diagnosed with PD. The Italian version showed good linguistic and cultural validity, with only one significant difference from the English original version. The word "illness" has not been translated literally (i.e. "malattia"), but with the expression "psychological problem" (i.e. "problema psicologico"). This change was motivated by two reasons. First, IPII was born as a psychiatric interview for inpatient, while in the current use with the MAS-A it is used in more varied fields. Second, the focus group confirmed research team's hypothesis that the literal translation (i.e. illness-malattia) was perceived as stigmatizing in the Italian language.

Once an Italian translation was linguistically and culturally validated, a psychometric validation procedure was defined. A researcher blind to the other team members conducted the initial assessment and confirmed the inclusion and exclusion criteria. If the patient was eligible for the study and signed the informed consent form, the same researcher did the interview and collected the other measures. The IPII was recorded and then transcribed in an anonymized text file. Then, two different researchers analyzed the text blind to each other through the MAS-A scoring system. All the team's members had at least five years of experience in PD an BPE.

The raters had also five years of experience in metacognitively oriented psychotherapy and completed a specific training on MAS-A and IPII.

Collected data were preliminarily analyzed through standard descriptives. Then, criterion and concurrent validity were explored though Pearson's *r* correlation between MAS-A and BCIS-SR and SCID-5-AMPD, respectively. Finally, inter-rater reliability was assessed through intraclass correlation coefficient (ICC), by considering a two-way mixed effect where rater was the fixed effect, and subject the random effect (Bartko, 1966). ICC result can be interpreted as follows: values less than .5 indicate poor reliability; values between .5 and .75 indicate moderate reliability; values between .75 and .9 indicate good reliability; values greater than .90 indicate excellent reliability.

Study 1: Results

Table 2 reports the correlation between all the measures of Study 1. We found significant and medium correlations (Pearson's *r* ranging between .3 and .5; $p<.05$) between all three scales. Results indicate that the total score of MAS-A though the Italian version of IPII is reliable, in respect to both construct validity (i.e. correlation between MAS-A and BCIS-SR; $r = -.370$; $p<.05$) and predictive validity (i.e. correlation between MAS-A and GLPF; $r = -.478$; $p<.005$).

Inter-rater reliability is extremely high and can be considered excellent (Bartko, 1966). ICC between raters at total score of MAS-A (see Table 3) was greater than .9 considering either the single measure or its average.

STUDY 2

Study 2: Sample

We recruited 45 consecutive healthy young adults from college students. The male to female ratio was almost equal to 2:1, and mean age was 22.05 (see Table 4). Inclusion criteria were: (i) be over 18 years of age; (ii) to able to read and sign the inform consent form. Exclusion criteria were: (i) not being an Italian mother tongue; (ii) to be diagnosed with a mental disorder; (iii) being under psychopharmacological or psychosocial treatment. The study was approved by the Ethical Committee of Tages Onlus (Ref. No. 03-120919).

Study 2: Measures

For details of BCIS, IPII, and MAS-A see S*tudy 1: Measures*.

– *Depression, Anxiety and Stress Scale* (*DASS-21*). DASS-21 is 21-item likert scale for the assessment of depression, anxiety and stress trhough three different subscales. A total score (DASS-21T) can be computed by adding all the items. The reliability of the scales is good, with Cronbach's α ranging from .78 to .89 (Henry & Crawford, 2005).

Table 2 – Correlation between measures of Study 1

		MAS-A	BCIS-SR	GLPF
MAS-A	Pearson's *r*	1	−.370	−.478
	Sig. (2-tailed)		.012	.001
BCIS-SR	Pearson's *r*	−.370	1	−.378
	Sig. (2-tailed)	.012		.010
GLPF	Pearson's *r*	−.478	−.378*	1
	Sig. (2-tailed)	.001	.010	

Note. MAS-A: total score of *Metacognitive Assessment Scale – Abbreviated*; BIS-SR: impaired self-reflectiveness score at *Beck Cognitive Insight Scale*; GLPF: Global Level of Personality Functioning at SCID-5-PD-AMPD.

Table 3 – Intraclass Correlation Coefficient between raters at MAS-A total score

			95% Confidence Interval		F Test with True Value 0			
		Intraclass Correlation	Lower Bound	Upper Bound	Value	*df1*	*df2*	Sig
Study 1	Single measures	.968	.944	.982	61.923	47	47	.000
	Average measures	.984	.971	.991	61.923	47	47	.000
Study 2	Single measures	.797	.659	.883	8.859	44	44	.000
	Average measures	.887	.795	.938	8.859	44	44	.000

Note: The Intraclass Correlation Coefficient has been calculated on *Metacognitive Assessment Scale – Abbreviated (MAS-A)* total score, through a two-way mixed effects model where people effects are random and measures effects are fixed.

Table 4 – Descriptives of Sample 2 (Study 2)

Sample	45
Age	22.05 (*SD* = 2.02)
Sex	M = 16 (35.55%) F = 29 (64.45%)
Education	
Middle School or less	0 (0%)
High School	43 (95.55%)
College	2 (4.45%)
Advanced Degree	0 (0%)

Study 2: Procedure and statistical analysis

For the linguistic validation of the non-clinical version of IPII we followed the same procedure as in Study 1. The only difference was the recruitment of healthy young adults for the focus group ($n = 5$) instead of patients diagnosed with PD. The Italian version showed good linguistic and cultural validity. The psychometric validation procedure and statistical plan were also the same as in Study 1. The only difference was the use of DASS-21 for concurrent validity (instead of SCID-5-AMPD).

Study 2: Results

Table 5 reports the correlation between all the measures of Study 2. We found significant and medium correlations (Pearson's r ranging between .3 and .5; $p<.05$) between all three scales. Results indicate that the total score of MAS-A as calculated on transcripts of the Italian non-clinical IPII is reliable, in respect to both construct validity (i.e. correlation between MAS-A and BCIS-SR; $r = -.363$; $p<.05$) and predictive validity (i.e. correlation between MAS-A and DASS-21; $r = -.375$; $p<.01$). Moreover, inter-rater reliability is high and can be considered good (Bartko, 1966). ICC between raters at total score of MAS-A (see Table 3) ranged between .75 and .9 considering either the single measure or its average.

DISCUSSION

Over the past 20 years, the metacognition construct has become increasingly relevant in the conceptualization of DPs and psychosis. Clinicians need reliable tools that support them in understanding patient metacognitive functioning and outlining an appropriate treatment. Indeed, the fragmentation of experience in people struggling with severe mental disorders affects the course of therapy and it is pivotal to adapt the intervention to the patient's level of metacognition.

Although MAS-A is derived from studies conducted by Semerari and colleagues in Italy (Carcione et al., 1997; Semerari et al., 2012), the abbreviated version by Lysaker (Lysaker et al., 2019; Lysaker et al., 2002, 2011) has facilitated the dissemination of this complex assessment procedure. Today MAS-A is used not only in English-speaking countries but also in Spain, Germany, Israel, Russia. The present research presents for the first time the linguistic and psychometric validation of IPII and MAS-A in both their

Table 5 – Correlation between measures of Study 2

		MAS-A	BCIS-SR	DASS-21
MAS-A	Pearson's *r*	1	−.363	−.375
	Sig. (2-tailed)		.014	.006
BCIS-SR	Pearson's *r*	−.363	1	−.378
	Sig. (2-tailed)	.014		.010
DASS-21	Pearson's r	−.375	−.378*	1
	Sig. (2-tailed)	.006	.010	

Note. MAS-A: total score of *Metacognitive Assessment Scale – Abbreviated*; BCIS-SR: impaired self-reflectiveness score at *Beck Cognitive Insight Scale*; DASS-21: total score of Depression, *Anxiety and Stress Scale-21*.

clinical and non-clinical versions.

Our results show that the clinical version of the Lysaker's protocol is extremely reliable between different raters (ICC>.90) and in respect to concurrent measures such as cognitive insight and personality pathology. The non-clinical version reports lower inter-rater reliability even if the values are still good. It is interesting to note that the measure of cognitive insight shows a smaller correlation with metacognition when compared with measure of psychopathology (see Table 2 and Table 5). This result can be interpreted differently. On the one hand, it could be a methodological limitation linked to the Italian validation process. The low sample size or the diverse characteristics of the raters could have conditioned the small correlation. However, this interpretation contrasts with the high values of ICC and so of inter-rater reliability. On the other hand, the self-reflectivity scale of BCIS might score only a component of the wider construct of metacognition. A construct that in person with a fragmented experience is difficult to be assessed through self-reported measure. Indeed, MAS-A showed an excellent ability to predict not only the fragmentation of narratives, but also neurocognitive functioning (Lysaker et al., 2005). Conversely, self-reported measures show several biases with people with low metacognition, especially at initial assessment. The BCIS was precisely developed as a routine tool with psychiatric inpatients. At the same time, the GLPF can be seen as a broad measure of both functioning and psychopathology which is expected to correlate with broad measures such as MAS-A (Widiger et al., 2019).

There are a few important limitations. First, we recruited either participants who voluntarily asked for psychotherapy treatment (Study 1) or college students (Study 2). Samples with different characteristics may partially invalidate our results. Moreover, the two sample sizes were low, even if adequate for an inter-rater reliability study. Second, the two raters had a long experience in the assessment of metacognition and in the treatment of DP and BPE through metacognitively oriented psychotherapy. Further research should explore the inter-rater reliability controlling for the duration and format of training in MAS-A and IPII. Finally, several scholars highlight how a pairwise interview design has to be considered basically optimistic in the results (Widiger & Oltmanns, 2016). Although it is the most used research design to psychometrically validate interviews, the collected evidence might not be considered robust.

In conclusion, our research confirms the reliability of MAS-A and IPII in assessing metacognition in Italian clinical and non-clinical samples. Inter-rater reliability, construct and predictive validity are at least adequate. Trained clinicians can effectively apply in Italian one of the most used procedures for assessing metacognition in severe mental disorders, that is the MAS-A scoring system on the transcripts of IPII.

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Metacognitive reflection and insight therapy: Introduction and overview

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ABSTRACT. L'esperienza della psicosi spesso implica cambiamenti sottili ma pervasivi nel modo in cui le persone sperimentano se stesse e il mondo. Dall'altro lato della medaglia, possiamo riconoscere come le persone guariscono dalla psicosi e questi sottili cambiamenti vengono invertiti. *La metacognitive reflection and insight therapy* (MERIT) rappresenta un tentativo di sviluppare una terapia orientata al recovery sensibile a questo tipo di cambiamenti nell'esperienza che le persone hanno di se stesse e del mondo. La MERIT cerca di promuovere la capacità metacognitiva o la capacità di formare idee integrate di sé e degli altri, consentendo così alle persone con diagnosi di psicosi di formulare idee coerenti sulle loro sfide psicologiche e di decidere come vogliono affrontarle. Al fine di stimolare la discussione e il dibattito su questa terapia e simili forme di trattamento, questo articolo esplorerà la formulazione teorica e l'assessment della metacognizione alla base della MERIT, e come la metacognizione sia stata studiata nella psicosi. Discuteremo poi gli sviluppi della MERIT, insieme ai moduli che la definiscono nonché i punti di convergenza e divergenza rispetto ad altre terapie spesso proposte a persone con diagnosi di psicosi. Infine, verranno discussi i limiti e le direzioni future.

SUMMARY. The experience of psychosis often involves subtle but pervasive changes in how persons experience themselves and the world. On the other side of the coin, persons also recover from psychosis and these subtle changes are reversed. Metacognitive reflection and insight therapy (MERIT) is an example of one attempt to develop a recovery oriented therapy sensitive to these kinds of changes in persons' experience of themselves and the world. MERIT seeks to promote metacognitive capacity or the ability to form integrated ideas of the self and others, thereby allowing persons diagnosed with psychosis to form coherent ideas about their mental health challenges and to decide how they want to manage them. To spur discussion and debate regarding this and related forms of treatment, this paper will explore the concept of metacognition and its measurement which underlies MERIT, and how metacognition has been studied in psychosis. We will then discuss the development of MERIT, along with its defining elements and points of convergence and divergence from other therapies often offered to persons diagnosed with psychosis. Finally, limitations and future directions will be presented.

Keywords: *Psychotherapy, Psychosis, Recovery, Metacognition, Social cognition, Schizophrenia, Intersubjectivity*

INTRODUCTION

The experience and course of psychosis has long defied simple characterization. More than a matter of psychiatric symptoms in need of medical management, or skills deficits to be remediated, psychosis involves a profound psychological alteration in how people experience and understand themselves, others, and the world around them (Kukla & Lysaker, 2020; Lysaker & Lysaker, 2010, 2020). These disruptions in how persons experience themselves and others may be so severe that persons with psychosis may no longer experience themselves as meaningfully connected to others or their communities (Davidson, 2003; Firmin, Zalzala, Hamm, Luther & Lysaker, 2021). Persons with psychosis may also lose a previous sense of a coherent and integrated sense of their identity (McCarthy-Jones, Marriott, Knowles, Rowse & Thompson, 2015). This is to say that persons with psychosis may experience their thoughts, feelings, bodily states and actions as increasingly fragmented or unrelated to one another, leaving the person with a reduced sense of agency and purpose. However, despite these challenges, it has been found that many people with psychosis can make considerable improvements in their lives and make significant progress toward recovery (Leonhardt et al., 2017). Not only does this literature supporting the existence of recovery contradict the expectation that psychosis necessarily follows a course of continuous deterioration, it importantly raises the question of which type of interventions can be applied to facilitate the process of recovery.

A focus on self-experience and an orientation toward recovery are not commonly part of contemporary mainstream thinking about psychosis. As a result, the concern with these issues has challenged us to think differently about psychosis and how it might optimally be treated (Hamm, Rutherford, Wiesepape & Lysaker, 2020; Korsbek, 2013; Moncrieff, 2015). Metacognitive reflection and insight therapy (MERIT; Lysaker & Klion, 2017) is an individual psychotherapy for persons with psychosis that grew out of these efforts to help persons experiencing psychosis to better understand themselves, their condition, and to best facilitate the process of helping them to improve the course of their lives. To spur discussion and debate regarding this and related forms of treatment, this paper will present the basic concept of metacognition which underlies MERIT, how MERIT measures and responds to deficits in metacognition, and how metacognition has been studied in psychosis. We will then discuss the development of MERIT, along with its defining elements and points of convergence and divergence from other therapies often offered to persons diagnosed with psychosis. Finally, limitations and future directions are presented.

MERIT AND METACOGNITION

MERIT is rooted in the concept of metacognition, the process of thinking about, monitoring, and adjusting one's own thoughts and internal states (Flavell, 1979; Moritz & Lysaker, 2018). Metacognition includes specific experiences (e.g., having a sensation of tension in one's forehead or being aware of feeling sad or happy about a certain thing) as well as how these experiences may be related to one another. As we form larger ideas about who we are in the world and who others are, we do so by assembling or synthesizing information. To have a broader sense of oneself or others is to have a feeling for how these bits of experience, such as individual thoughts, feelings and embodied experiences, can be integrated to make up a larger whole, something greater than the sum of its parts. In turn, these experiences can be woven together over time and understood to be related to similar patterns throughout one's life, enabling persons to have a holistic picture of themselves as a unique being in the world (Lysaker, Gagen et al., 2020). With significantly impaired metacognitive capacity, however, the experience of self and others can be said to be fragmented or left as individual pieces of experiences which cannot be fit together to create a broader sense of self.

From this perspective, metacognition is also more than a set of cognitive process. It is by nature an intersubjective human activity. Intersubjectivity refers to interactions which take place between persons (Beebe, Knoblauch, Rustin & Sorter, 2005; Cortina & Liotti, 2010) that facilitate the shared understanding of emotional, cognitive and embodied experiences (Stern, 2000). Intersubjectivity allows persons to immediately form a holistic sense of other persons and oneself. This is to say intersubjectivity allows people to understand one another as more than a collection of unrelated attributes or states (Lysaker et al., 2021). Intersubjectivity is thought to develop early in life with the emergence of a preverbal subjective sense of self and other, the caregiver (Stern, 2000). It matures alongside language and becomes the basis for the ability to describe and reflect upon the experience of oneself and others (Cortina & Liotti, 2010). To say that metacognition is always intersubjective in

nature is to say that the ideas persons form about themselves and others are always being created with someone who is either present or who could be imagined and react to those ideas (Hasson-Ohayon et al., 2020).

Measuring metacognition: MAS-A

MERIT is also concerned with the empirical assessment of metacognitive process. In MERIT the empirical assessment of metacognition is not only an important tool for researchers, but also a critical tool for clinicians that allows them to use interventions that will be optimally beneficial to the patient at any given time according to that patient's capacity for metacognition. In order to meet this need, an assessment tool was developed called the *Metacognition Assessment Scale – Abbreviated* (*MAS-A*; Cheli, Enzo, Chiarello & Cavalletti, 2021; Lysaker, Minor et al., 2020). The MAS-A is comprised of four rating scales corresponding with Semerari et al.'s (2003) seminal work in the area: Self-reflectivity (S), Understanding of Others (O), Decentration (D) or the awareness of one's place in the broad social world or community, and Mastery (M) or the ability to recognize and respond to opportunities and challenges using metacognitive knowledge. Items on each scale are anchored with the metacognitive act reflecting that level of metacognition and arranged sequentially by level of complexity. As a result, the MAS-A is designed so that each item describes a metacognitive activity that requires greater levels of metacognitive capacity to perform the act than was required by the item below it. Psychometric information can be found in Lysaker, Minor et al. (2020) and scoring guides are available at www.meritinstitute.org.

Metacognition and psychosis

Applied to the study of psychosis, it has been suggested that deficits in metacognition, or the ability to integrate information into a flexible sense of self and others, can result in a fragmented sense of self and a tenuous sense of connection with the world resulting in a range of objective as well as subjective features of psychosis (Lysaker, Minor et al., 2020). With a complex etiology and multiple contributory factors, these metacognitive deficits have been proposed to be part of an interacting network of key features of psychosis, including symptoms, neurocognition and social cognition (Buck, Gagen, Luther, Kukla & Lysaker, 2020; Hasson-Ohayon, Goldzweig, Lavie, Luther & Lysaker, 2018), which reduce any sense persons may have of their purpose in life, future possibilities, or their place and position amongst their families, peers, institutions and broader communities (Lysaker & Lysaker, 2017, 2020).

Research supporting these assertions includes findings that persons diagnosed with schizophrenia spectrum disorder offer personal narratives in which the participant's sense of self and others is significantly more fragmented than what is offered in the personal narratives of persons with other conditions including bipolar disorder, depression and borderline personality disorder as well as others without significant psychiatric challenges (Lysaker, Minor et al., 2020). In these same studies persons with schizophrenia spectrum disorder also display relatively more fragmented and egocentric senses of their place in the world and struggle to form a unique sense of their challenges and decide how to manage them. Relatively greater levels of fragmentation among persons with schizophrenia is also linked in other studies with disturbances in subjective experience as measured in terms of coherence of autobiographic memory (Holm et al., 2020; Mediavilla et al., 2021), self-compassion (Hochheiser, Lundin & Lysaker, 2020), and the fundamental ways persons make sense of their relationships (Bröcker et al., 2020) and meaning in life (Bercovich et al., 2020). Studies have also linked relatively greater levels of fragmentation with objective phenomenon suggestive of lesser levels of recovery including greater levels of symptoms (Arnon-Ribenfeld, Hasson-Ohayon, Lavidor, Atzil & Lysaker, 2017), especially negative symptoms (Faith et al., 2020; Lysaker, Chernov et al., 2020), decreased awareness of illness (Lysaker, Gagen et al., 2019), lower intrinsic motivation (Luther et al., 2017) as well as a range of issues related to social function including stability and size of social networks (Gagen, Zalzala, Hochheiser, Schnakenberg-Martin & Lysaker, 2019; Masse, Paquin, Lysaker & Lecomte, 2020) and empathy (Bonfils, Lysaker, Minor & Salyers, 2019).

MERIT: Development and implementation

Emerging from the recognition that impairments in metacognition underlie a wide range of objective and subjective features of psychosis, an international collaboration

was formed in order to contemplate how psychotherapy might promote metacognitive capacities among persons with psychosis and related forms mental illness (Lysaker, Gagen et al., 2020). Comprised of experts in psychosis who had substantial experience with cognitive psychotherapy, psychoanalysis, psychiatric rehabilitation and humanistic/existential therapies for adults diagnosed with psychosis, the group's goal was to produce a treatment approach that could be applied with fidelity and would be helpful to a broad range of persons diagnosed with psychosis despite the substantial diversity of clinical features, acuity levels and sociocultural contexts which often characterize this group.

Since the problems presented by psychosis are sufficiently complex and far reaching that they cannot be addressed exclusively by any one model, it was determined that this psychotherapeutic approach needed to be relevant and accessible to a broad audience of clinicians, including cognitive behavioral, humanistic, existential and psychodynamic practitioners. As a result, MERIT was developed so that a diverse group of clinicians utilizing different approaches would find it to be relevant and be able to use it in responding to the unique needs of individual patients by facilitating exchanges which promote metacognitive capacity.

At the onset, it was also decided that since metacognition is concerned with the relationships between different experiences and the larger meanings which may emerge from them, the approach for each patient could not be predetermined in terms of a fixed curriculum or set of specified activities. Rather, if the task was for the patient and therapist to jointly make sense of the patient's experience and how to best respond to it, the content of those exchanges could not be determined a priori. Indeed, certain interventions which might be effective for one individual might work against the development of metacognitive capacity in another. For example, for one patient a mindfulness exercise might allow the patient to be aware of bodily distress compromising self-confidence while for another the same mindfulness exercise might feel like the therapist exerting control and telling the patient how to explore their experience. Only a joint exploration of the meaning of practicing certain exercises can enhance both metacognition and recovery.

In order to meet these goals, a problem-focused or symptom-based approach is explicitly avoided. Rather, it was decided that MERIT should be defined in terms of clinical processes and definable therapist behavior which could transcend a particular clinical approach and would serve to promote joint reflection about the metacognitive process. It was also evident that given the deeply subjective nature of the outcomes and complexity of the potential barriers to those outcomes, a recommended length of treatment could not be reasonably suggested.

The defining elements of MERIT

MERIT was defined as the sufficient presence of eight elements in each session (Lysaker & Klion, 2017). These elements were divided into three groups referred to as content, process, and superordinate elements.

Content elements involve reflection upon the material patients bring to therapy and their reactions to the therapist's response to that material. In each case, successful adherence is defined as an attempt to reflect upon the concerns of each element rather than the attainment of any particular insight.

- Element one, or *The agenda*, requires consideration of the things the patient is seeking regardless of how potentially contradictory, complimentary or unrelated these things may be, or the extent to which these things are inside of or outside of awareness.
- Element two, or *Insertion of the therapist's mind*, calls for the therapist to enter into a dialogue with the patient about the material they have introduced and to consider the range of reactions patients have to what the therapist has shared about their response to that material.
- Element three, or *Eliciting narrative episodes*, calls for consideration of the patient's experience in terms of their narrative of sequences of events. In other words, this involves explicit interest in stories about experiences rather than abstractions about those experiences.
- Element four, or *Defining the psychological problem*, calls for consideration of the psychological challenges the patient is having to address in their life.

Process elements are concerned with the experience within the psychotherapy session itself. In contrast to the content elements, the process elements promote reflection about the therapeutic context in which reflections are taking place and the impact of these reflections upon the patient.

- Element five, or *Reflecting on the therapeutic relationship*, calls for the consideration of the therapeutic relationship as an interpersonal environment in which joint reflection is taking place within the session with the patient.

– Element six, or *Reflecting on progress*, calls for a joint consideration between the patient and therapist of the concrete consequence of the session in terms of the patient's embodied, cognitive or emotional experience. Here, the focus is on what has changed and stayed the same in the patient's mind and body in response to what has been discussed.

Superordinate elements are concerned with whether the therapist's interventions are at a level consistent with the patients' current metacognitive capacities. These last two elements are grounded in the MERIT integration framework (MERIT-IF; Lysaker & Klion, 2017), a clinical tool based upon the MAS-A, that is used in-session to assess patients' capacities on each of these dimensions and ensure that interventions are commensurate with those abilities.

– Element seven, or *Stimulating self-reflection and awareness of the other*, asks therapists to offer interventions that stimulate patients to think about themselves or others at a level that does not exceed the patients' current metacognitive abilities.
– Element eight, or *Stimulating mastery*, specifies that therapist reflections about patients' sense of their challenges and response to them, referred to as mastery, is consistent with the patients' metacognitive abilities.

The eight MERIT elements are intended to enhance metacognitive capacity in a synergistic manner. Like physical therapy, MERIT seeks to optimally challenge the patient so that new capacities develop over time. Care is taken to not overwhelm the patient with interventions that are too complex but also to ensure that they are sufficiently challenging so that growth will be stimulated. In this model, patients think about themselves and others in each session and slowly become increasingly able to do so in a way that more information can be integrated. This facilitates the patient's capacity to make sense of the challenges they face and seek ways to overcome them with the ultimate goal of self-directed recovery.

Importantly, these elements are intended to be something that could be executed when interacting with patients with very different clinical presentations. As an illustration, consider four different patients diagnosed with psychosis who present in session in very different ways. The first says she is not ill and is attending under coercion. The second says he is tortured by voices inserted in his head which remind him of humiliating concerns. The third experiences apathy, anhedonia and expresses little emotion, sitting quietly and uncertain of what to say. The fourth speaks in incomplete sentences which are disorganized and offer ideas which are difficult to follow. For each, then the task in MERIT is the same; explore what the patient's agenda is (Element one), engage the patient in dialogue (Element two), elicit narrative episodes (Element three), etc. An essential point here is that patients with very divergent complaints may require similar approaches while patients with similar complaints may require quite different approaches. Focusing on the first element to flesh out this idea, the patient with positive symptoms and the one with disorganization, for example, may agree that their primary concern is not to be vulnerable. Thus, in MERIT for both patients, despite their dissimilarities, there would be a similar exploration of what vulnerability meant to them and why it would be important for each patient to avoid it. By contrast, one patient with negative symptoms such as apathy, anhedonia and blunted affect might reveal their agenda to involve having another person understand them while another with the same symptoms might reveal that their key goal in the session is to protect themselves from anyone ever judging them. In parallel, patients with different presenting concerns may require the same level of intervention in MERIT given their similar levels of metacognitive function while patients with similar complaints may need different interventions given their level of metacognitive function. Thus, the overarching idea is that the processes identified in the MERIT elements supersede clinical presentation and allow for a unified approach that can stretch across and address the needs of patients with broadly different concerns.

A final issue is that the elements of MERIT are intended to ensure that therapists from different backgrounds can adapt their practice to conform to the elements of MERIT and promote the growth of metacognitive capacity and recovery. Thus, therapists do not need to learn radically new procedures, though they may need to look at what they do and how they think about outcome in a significantly different light. MERIT intends, for example, that a humanistic, cognitive and psychodynamic therapist could practice in ways similar to how they have previously. The difference that would come from MERIT would be that these therapists might each now see certain processes that were perhaps previously in background as now in the foreground and other practices that may have been previously seen as benign, as destructive and to be avoided. As a formal illustration, case work has described how common interventions, including behavior activation and psychoeducation, can be altered and offered in ways

in which retain some of their original characteristics while also forging at a deeper level meaning in an intersubjective context within psychotherapy (Hasson-Ohayon, Arnon-Ribenfeld, Hamm & Lysaker, 2017; Igra, Roe, Lavi-Rotenberg, Lysaker & Hasson-Ohayon, 2020).

MERIT: Points of divergence and convergence with current trends

When considered in total, the elements of MERIT have much in common with other contemporary therapies for psychosis but also have some significant dissimilarities. Like a number of cognitive therapies, MERIT seeks to promote recovery and to facilitate the process of patients thinking about their own thoughts and their relationships to those thoughts (Lysaker & Hasson-Ohayon, 2018). It also shares an orientation toward working collaboratively with patients in a way that matches shared decision making (Zisman-Ilani, Lysaker & Hasson-Ohayon, 2021). However, in contrast to many approaches, MERIT does not suggest to patients what they should talk about. It also emphasizes joint meaning making between patients and therapists rather than one party on their own discovering and proposing solutions. Rather than therapists unilaterally prescribing activities that are thought to be enlightening or elucidating, therapists in MERIT are asked to behave in a creative fashion so that the patient's metacognition is stimulated in a way that will promote their ability to make meaning of their experiences and responses to those experiences. In MERIT, the therapist sharing their reactions and thoughts and subsequent exploration of patients' reactions to that can itself be a key intervention which promotes the growth of metacognitive capacity.

MERIT also differs from more medically focused treatments in that it seeks to engage patients in the process of making sense of their condition and challenges they face. As a result, patients who initially are unable to identify concrete goals or even agree that they have mental illness can be engaged and treated by these procedures. Finally, the goals and outcomes of this treatment approach are largely patient-directed and are also more fluid than in many other approaches. As a patient's self-understanding and appreciation of their situation evolves, goals that were initially not apparent may come the fore and represent tangible aspects of recovery.

MERIT: Evidence and limitations

Initial evidence that supports MERIT comes from quantitative, qualitative and case studies. To date, three open trials of MERIT conducted within brief, medium length and long-term formats have found that patients diagnosed with psychosis will accept this treatment and experience significant improvements in metacognitive function (Bargenquast & Schweitzer, 2014; de Jong, van Donkersgoed, Pijnenborg & Lysaker, 2016; Lavi-Rotenberg et al., 2020; Schweitzer, Greben & Barenquast, 2017). More significantly, two randomized controlled trials report positive outcomes for patients diagnosed with schizophrenia without adverse effects (de Jong, van Donkersgoed et al., 2019; Vohs et al., 2018). The latter study was notable because despite the fact that it was comprised of patients with first episode psychosis and poor insight, a group notoriously difficult to engage in treatment, with 80% of patients completed treatment and achieved significant improvements in insight (Vohs et al., 2018).

Qualitative and case reports have also supported the efficacy of MERIT. Two qualitative studies of persons diagnosed with psychosis who received MERIT found that patients were able to think about themselves in more complex ways which enabled them to form an understanding of themselves as connected to their pasts, having a coherent sense of their future and able to tolerate and manage emotional pain (Lysaker et al., 2015; de Jong, Hasson-Ohayon et al., 2019). As summarized elsewhere (Lysaker, Gagen et al., 2020), an analysis of 15 different case studies indicated that MERIT can be delivered with fidelity to persons with a wide range of clinical presentations and yield positive treatment outcomes.

In summary, this work provides significant early support for MERIT as a treatment for persons diagnosed with psychosis. Future studies are needed with more diverse samples and long-term follow-up assessments. Further work should also include qualitative assessments of the effects of MERIT from the patient's viewpoint. Additionally, there is a need for mixed method approaches which can tease apart the complex and nuanced relationships that exist between subjective and objective outcomes that might emerge from this treatment. For instance, how are subtle qualitative changes in how a person thinks about themselves related to measurable changes in psychosocial function. Finally, MERIT research to date has focused almost exclusively on individual interventions in outpatient settings. As a result,

work is needed to explore whether and how these procedures might be expanded to family, group, and inpatient settings, especially for persons in particularly acute states.

From a psychotherapy process perspective, many questions remain. For instance, while fidelity to the MERIT treatment model is conceptually defined by the presence of eight elements in treatment sessions, it has yet to be determined whether these prescribed elements can be empirically linked to demonstrable clinical outcomes. To this point, a recent study suggested that the second and sixth elements, insertion of the therapist's mind and discussion of the therapeutic relationship, were more predictive of positive clinical outcomes than the other elements (Lavi-Rotenberg et al., 2020). Further, while much of MERIT related research has focused on attention to the metacognitive dimensions of self-reflectivity, awareness of the other and mastery, interest is growing in the domain of decentration to address what phenomenologists have long described as centrality or the sense that in the world one is always the center of events (Phulpin, Goze, Faure & Lysaker, in press). Other work is in parallel exploring how this approach may also address personality disorder, including schizotypal personality disorder (Cheli, Lysaker & Dimaggio, 2019). Finally, there has been emerging work on how to best train and supervise MERIT therapists (Lysaker, Buck et al., 2019), however, further attention needs to be directed toward refining these practices and increasing our understanding of how to support this treatment in diverse settings.

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A practice-oriented review on effectiveness of metacognitive training (MCT) for psychosis

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ABSTRACT. Questa review riporta una panoramica pratica del *metacognitive training for psychosis* (MCT). Vengono presentate questioni pratiche relative all'uso e alla gestione del training. Il MCT si compone di due cicli di 8 moduli (più due moduli aggiuntivi). Review e meta-analisi hanno dimostrato la sua fattibilità e l'elevata accettazione da parte dei pazienti. Si riportano effect size medi per quanto riguarda la riduzione dei sintomi psicotici. Gli effetti sul saltare alle conclusioni sono misti. Gli effetti maggiori sono riportati quando i pazienti hanno sintomi psicotici più generali e da lievi a moderati e quando i due cicli interi vengono completati. Vengono discussi punti di forza e limiti e sono discusse delle raccomandazioni per l'applicazione e le ricerche future. MCT offre un progresso significativo nel trattamento della psicosi.

SUMMARY. This review contains a practical overview of the metacognitive training for psychosis (MCT); practical issues concerning the use and administration of the training are presented. MCT consists of two cycles of 8 modules (plus two additional modules). Reviews and meta-analyses have demonstrated the feasibility and high acceptance by patients. Medium effect sizes are reported with regard to reduction of psychotic symptoms. Effects on jumping to conclusions are mixed. Largest effects are reported when patients have more general, and mild to moderate psychotic symptoms, and when the two full cycles are completed. Strengths and limitations are discussed, and recommendations for use and future research are presented. MCT is a meaningful addition to the treatment of psychosis.

Keywords: *Metacognitive training, Reasoning biases, Delusions, Improved wellbeing, Practical issues*

INTRODUCTION

Delusions are one of the core diagnostic criteria for psychotic disorders (American Psychiatric Association, 2013). They are defined as fixed false beliefs that are held with high conviction, and are not amenable to change in light of conflicting evidence. These irrational beliefs are based on wrong conclusions of the outer reality, defying normal reasoning, and remain firm even when overwhelming proof is presented to dispute them. There is strong evidence that cognitive processes, in particular cognitive biases are involved in the formation and maintenance of delusions (Bentall, 1994; Broyd, Balzan, Woodward & Allen, 2017; Moritz & Woodward, 2007a). Cognitive biases, such as jumping to conclusions (JTC) (Dudley, Taylor, Wickham & Hutton, 2016), bias against discriminatory evidence (BADE) (Woodward, Moritz, Cuttler & Whitman, 2006), and overconfidence in errors (Moritz & Woodward, 2006) are common amongst patients with psychosis, and affect their daily social interactions and functional outcomes (Brüne, Dimaggio & Lysaker, 2011). In the early years of this millennium, there was a need for a cognitive approach in treatment of psychosis, given that treatment effects of antipsychotics are moderate (Huhn et al., 2020), and up to 30% of patients is treatment resistant (Caspi, Davidson & Tamminga, 2004). With cognitive behavioural therapy (CBT) symptoms improve, but insight remains poor (Pijnenborg, van Donkersgoed, David & Aleman, 2013). Therefore, in 2002/2003 Moritz and Woodward (Moritz & Woodward, 2007b) developed the metacognitive training (MCT).

Metacognitive training aims to raise patients' awareness for their reasoning styles (e.g. cognitive biases), and targets positive psychotic symptoms through general metacognitive thinking. The goal of the MCT is the application of this awareness and knowledge in daily life. The focus is process- and not symptom-oriented: individual delusional themes are not directly addressed. Through this indirect, so-called "backdoor approach", MCT seeks to both increase awareness about and normalisation of cognitive processes underlying positive psychotic symptoms. MCT is based on a large body of empirical evidence and incorporates elements of psychoeducation, cognitive remediation (CR), and CBT. Transfer to daily life is a strong focus point. In this practice-oriented review, we will first describe the training, its content and practical issues concerning the use and administration of the training. Then the dynamic character is described, the individual therapy (MCT+) and recent additions are highlighted. In the effectiveness section, we will discuss empirical findings, reviews and meta-analyses. We conclude by considering the strengths and limitations of the MCT and providing recommendations about characteristics of patients who might benefit the most from MCT, and with recommendations for administering the MCT.

MCT is a group intervention that consists of two parallel cycles of eight separate modules (for a description of the content of the modules, see Table 1). The training is highly structured, but with enough room for participants to exchange their views and experiences. The MCT consists of stand-alone modules, allowing for patients to join treatment groups at any time. The two parallel versions of the MCT ensure that modules with the same content can be repeated without repeating the exact exercises. The modules typically start with familiarising the participants with the target domain. The cognitive processes described are normalised and examples in daily life are given. Additionally, the consequences of excessive use of the respective cognitive process in psychosis are demonstrated, emphasising the (interpersonal) problems and occasional symptom worsening this may cause. The major part of the module consists of interactive exercises, the majority of which is delusion-neutral. The large amount of exercises allows the trainer to choose a selection relevant for the group (Moritz, Vitzthum, Randjbar, Veckenstedt & Woodward, 2010). First, the exercises are explained, thereafter participants do them independently, without answer options or extra prompts. Difficulty of the exercises may vary. At the end of the module, the relevance is emphasised by pointing again to the link between the cognitive process and psychosis (in a slide titled 'Transfer to psychosis') and with a case example. Homework may be presented, providing a short summary of the content of the module, and exercises with own experiences related to this module during the following week. In the first training session, participant receive two cards, with the purpose of carrying these with them. The yellow card contains three questions, that may help the patient rethink and reappraise a situation that feels threatening or insulting: "What is the evidence?", "Are there alternative views?", and "Even if it's like that… am I over-reacting?". The red card is more personal, and names and telephone numbers of people/institutions the patient can turn to in case of a crisis should be filled in.

Table 1 – Content of the metacognitive training per module (Moritz & Woodward, 2007b)

Module title	Target domain	Typical exercises
1. Attribution – Blaming and taking credit	Self-serving bias (self-serving bias *vs* depressive attributional style)	Different causes (blaming self, others or circumstances) of positive and negative events must be contemplated. Explanations including various causes are preferred to mono-causal explanations. The negative social consequences of self-serving attribution are highlighted.
2. Jumping to conclusions I	Data gathering bias (jumping to conclusions/ liberal acceptance/ bias against disconfirmatory evidence)	Hasty decisions may lead to incorrect answers, or give impressions that often reveal only half the truth. Fragmented pictures are shown that eventually display objects, and ambiguous pictures are displayed.
3. Changing beliefs	Incorrigibility (bias against disconfirmatory evidence)	Cartoon sequences are shown in backward order, which increasing ambiguity. Patients learn to withhold strong judgments until sufficient evidence has been collected and are encouraged to consider alternative views.
4. To empathise I	Theory of mind (first order)	Pictures of human faces are presented. Patients are asked how the people depicted might feel. Cartoon strips must be completed. Patients learn that relying on facial expression alone can be misleading, and multiple cues should be considered.
5. Memory	Overconfidence in errors (false memories)	Factors that may promote or impair memory acquisition are discussed. Complex scenes are displayed with two typical elements missing. Patients are taught to differentiate between false and correct memories by the vividness of the memory.
6. To empathise II	Theory of mind (second order/need for closure)	Different aspects guiding theory of mind (e.g. language) and their social consequences are discussed. Cartoon sequences are presented, and the perspective of one of the characters is considered.
7. Jumping to conclusions II	Data gathering bias (jumping to conclusions/ liberal acceptance)	As in module 2, the disadvantages of quick decision making are outlined. Paintings are displayed, and the correct title must be deduced from four response options.
8. Mood and self-esteem	Depressive thinking style (mood and self-esteem)	Depressive symptoms, causes, and treatment options are discussed. Typical depressive cognitive patterns are discussed. Strategies to help patients to improve mood and self-esteem are presented. This module does not contain typical exercises.
9. Additional module I: Self-esteem	Increasing self-esteem (sources/strengths/ strategies)	Self-esteem is a subjective dimension. The difference between low vs healthy self-esteem, and possible sources to self-esteem are shown. Participants are encouraged to focus on aspects in their life that are going well to increase self-esteem. Suggestions for daily routines are given.
10. Additional module II: Dealing with prejudices (Stigma)	Stigma (increasing awareness of self-stigma)	Mental illness is common in the general population (and also occurs in famous people). It does not define one's worth. Self-stigma is minimised by awareness and learning how to deal with the illness. Common clichés and misconceptions about psychosis are debunked. Ways of communicating about the illness to others are presented.

MCT group size ideally varies between 3-10 patients. The therapist may be a psychologist, occupational therapist, or other staff. The modules are highly standardised, and most slides are self-explanatory. MCT administration requires minimal staff training and preparation before sessions. The therapist ideally has received a training from the MCT staff, or has taken the certified online e-learning course (German and English: www.uke.de/e-mct). A thorough study of the extensive manual may also suffice, which provides extensive suggestions for administration (Moritz & Woodward, 2007a). The training modules are available at cost-free download (www.uke.de/mct) in many languages, and the manual may be requested at no costs through registration. An MCT session only requires a quiet room (with tables and chairs), a computer and a projector. The training also provides a set of behavioural rules for the training sessions, ensuring participants' wellbeing, privacy and respect towards other participants and the therapist. In most research settings MCT is administered twice a week, however, one weekly session is more general common practice.

In open group settings it may happen that patients repeat the exact same module. This is not a problem, because the exact answers to the exercises are forgotten, however, the content of the module is remembered, and patients may have encountered situations where they could put the learned content into practice. These different levels of experience increase the dynamics of the group, where the more experienced participants may function as a role model to the new participants. Modules may be repeated, and repetition within a module also plays an important role for maximum retention: in the introduction, the target domain of the module is explicitly presented; the slide 'Why are we doing this' emphasises the link with psychosis; and finally in the learning goals the target domain is revisited, followed by an example with psychosis. Additionally, the large amount of exercises facilitates consolidation through repetition, to increase learning through implicit confrontation with the dysfunctional thinking style. The interactive exercises and real life daily examples allow for participants to discuss own experiences, and give the MCT an "entertaining" character.

Ongoing development

"[…] In order to reach more meaningful change that will allow patients to lead fulfilling lives, existing treatment options, including MCT, must be improved".

While these words were published years later (Moritz, Woodward & Balzan, 2016), they clearly represent the attitude of the team behind the MCT. From the very start, adaptations were made, exercises modified, added or removed. Starting initially with MCT in four languages, now the modules are available in 37 different languages. Following the digital developments, video material was generated and collected, to increase the naturalistic character of the examples. Recently, the program, initially designed to reduce positive symptoms only, has been expanded with two (optional) additional modules, targeting (I) self-esteem and (II) stigma (dealing with prejudice) (Moritz & Schneider, 2016). For many patients emotional well-being represents a high treatment priority (Moritz & Schneider, 2016). An application was developed, the MCT & More app, targeting emotional problems and metacognition beyond psychosis (Lüdtke, Pult, Schröder, Moritz & Bücker, 2018). And finally, an e-learning course for therapists was created. Local initiatives to increase the usability of the treatment were supported. The Dutch version presents the text on the slides in smaller portions, increasing readability of the theoretical slides. Additionally, 'patients with psychosis' was replaced by 'individuals with a vulnerability for psychosis' to increase acceptance and identification with the examples. In Italy, a version specifically targeting youth with early psychosis was created (Ussorio et al., 2016), adapting language and the examples to the frame of reference of the young, by incorporating slides more animated and colourful, enriched by comics and cartoons; changing examples to familiar settings (school exams, fighting with siblings or friends) and including current idols (i.e., from sports, music, and cinema); the word 'psychosis' was replaced with 'distress,' 'problem,' or similar softer terms (Ussorio et al., 2016).

The group MCT formed the basis of the individual metacognitive therapy (MCT+), now available in 14 languages (Moritz et al., 2011). It consists of 11 sessions, with 10 modules provided by the therapy, and a first general session (no sheets available), to establish contact and perform an anamnesis. This first session is followed by an introduction to MCT+, and a case formulation, where the specific delusions and other symptoms of the patient are discussed. These elements are common practice in CBT, but differ greatly from the group training, where information processing is the central focus, and not the individual's specific problems. However, in the MCT+, personal delusional content should be openly

discussed. MCT+ uses exercises similar to the group MCT, applies them to the patient's individual problems and symptoms in a discussion between patient and therapist (Moritz et al., 2011). The MCT group modules Attribution (1), Changing beliefs (3), To empathise (4 & 6), and Memory (5) were adapted for this individual therapy. The module Decision making was designed, based on the MCT module Jumping to conclusions (2). The modules Depressive thinking styles and Self-esteem were adapted from MCT module 8 and the additional module I, Self-esteem. The therapy ends with a module containing information on living with psychosis, addressing stigma (see additional module II) and dealing with stress, in order to prevent relapse.

Cognitive biases are common also in other psychopathologies, and the basis of the MCT for psychosis was used to create MCT trainings for depression (D-MCT) (Jelinek, Faissner, Moritz & Kriston, 2019), depression later in life (MCT-Silver) (Schneider, Bücker, Riker, Karamatskos & Jelinek, 2018), borderline personality disorder (B-MCT) (Schilling, Moritz, Kriston, Krieger & Nagel, 2018), and obsessive compulsive disorder (MyMCT) (Miegel et al., 2020).

EFFECTIVENESS

From early to recent findings

Pilot studies (for reference, see Moritz & Woodward, 2007b) have demonstrated feasibility and safety of the MCT (Moritz & Woodward, 2007a). The *Positive and Negative Syndrome Scale* (*PANSS*) and the *Psychotic Symptom Rating Scales* (*PSYRATS*) were used as outcome measures for symptom severity. Subsequent assessor blind randomised controlled trials (RCT) showed medium effect sizes for the improvement of JTC, however, outcomes were not significant (Aghotor, Pfueller, Moritz, Weisbrod & Roesch-Ely, 2010; Moritz et al., 2011). Additionally, medium effect sizes were found on subjective training success, PANSS positive symptoms (Aghotor et al., 2010), and PANSS five-factor model subscales (Moritz et al., 2011). These findings did not reach significance either. After eight weeks (one module per week), delusional distress significantly decreased, and memory and social quality of life significantly improved. Most improvement was found on subjective wellbeing and general reasoning (Moritz et al., 2011).

The first longitudinal study, a two-site RCT, including 150 patients, with additional measurement at 6 months follow-up did not assess cognitive biases at post-treatment. Symptom severity was the main outcome, showing a significant reduction in delusion score after MCT compared to the control condition, and a trend towards significance for the PANSS positive subscale (Moritz et al., 2013). This outcome was associated with the number of attended sessions. Additionally, more patients showed a reduction of at least 20% on the PSYRATS delusion subscale, both post intervention and at follow-up. This study confirms the earlier findings that especially the appraisal of delusions improves and remains at this improved level even after 6 months. Overconfidence in errors also decreased (Köther et al., 2017). Participants were re-assessed at 3-year follow-up (Moritz et al., 2014). PANSS positive score and the PSYRATS delusion scale remained significantly lower for the MCT group compared to the control group. With the intention to treat analyses, PANSS delusion and total score also showed significant results after 3 years. Additionally, self-esteem and quality of life were significantly increased in the MCT compared to control group, showing a "sleeper" effect (Moritz et al., 2014).

After the above described German studies, RCTs were conducted across Europe and Asia. Most studies confirmed positive effects of MCT on the subjective perception of delusions or hallucinations (Favrod et al., 2014; Kumar et al., 2010). Other subjective measures such as usefulness, change of knowledge, helpfulness to recovery reported by the patient (Howe & Brown, 2015) and self-reflection (Lam et al., 2015) improved significantly, but self-certainty remained unchanged (Lam et al., 2015). However, one study could not detect any improvement in symptoms or cognitive biases due to MCT (van Oosterhout et al., 2014). Despite being well-powered, this study had included patients with at least moderate delusional symptoms, whereas other studies included more mildly ill patients, which might account for the absence of findings. Finally, recently the additional modules 9 & 10 were included in a study in Japan, showing a significant decrease of PANSS positive scores and of global functioning in the MCT group (Ishikawa et al., 2020).

After these studies in chronic (schizophrenia) patients, the patient population and methods were extended. MCT was administered to psychosis patients in a forensic setting (Kuokkanen, Lappalainen, Repo-Tiihonen & Tiihonen, 2014; Naughton et al., 2012). Global functioning and

consent to treatment improved after 16 sessions (Naughton et al., 2012). After a shorter treatment period, positive symptoms improved, but this result was not sustained (Kuokkanen et al., 2014). Furthermore, two Spanish groups investigated MCT in recent-onset psychosis, showing no effect on symptom severity (Ahuir et al., 2018; Ochoa et al., 2017). However, the larger study found an effect of MCT on cognitive insight, self-reflection, tolerance to frustration, and improvement of general functioning (Ochoa et al., 2017). An Italian study showed that duration of untreated psychosis in young patients did not seem to affect MCT outcomes (Ussorio et al., 2016). All patients improved on general psychopathology and positive symptoms, social functioning, as well as on verbal memory, executive function and on metacognitive and mentalising measures. MCT treatment was combined with the experience sampling method (ESM) in a Dutch study including early onset patients (Pos et al., 2018). No improvement in paranoid ideation nor in JTC was found. It was tentatively suggested that MCT reduced the association between negative affect and paranoid ideation (Pos et al., 2018). MCT has also been combined with neuroimaging, investigating the neural mechanisms underlying JTC (Andreou et al., 2018). After four weeks of MCT training, changes in neural activation were observed, possibly suggesting more effective neural processing during evidence gathering.

Reviews and meta-analyses

The first MCT review concluded that the MCT was feasible, safe, and highly accepted by patients. Furthermore, in most studies, JTC and positive symptoms improved, more in the MCT than in the active control condition, reporting moderate effect sizes (Moritz, Vitzthum, Randjbar, Veckenstedt & Woodward, 2010). Subsequent review papers added improvements in interpersonal and psychosocial functioning, and an indication of maintenance of the effects of decreased symptom severity and burden after MCT (Kumar, Menon, Moritz & Woodward, 2015), even at 3 years post treatment (Moritz et al., 2014). A systematic review including 14 studies published between 2009 and 2015 confirmed previous findings, however, did not find improvement in social functioning of patients in the MCT group (Pankowski, Kowalski & Gawęda, 2016). MCT is considered to be fun by at least 75% of the patients, and they would recommend it to other patients (Moritz et al., 2014). These aspects are important elements for treatment motivation and adherence. Other reviews found that MCT might be better suited (compared to CBT) for patients with lower illness insight, since delusions are not directly targeted, and that MCT might be most efficacious in first-episode psychosis patients (Menon et al., 2017). With regard to cognitive biases, most studies focused on JTC, with mixed results. Effect sizes are generally small to medium, and results do not always reach significance (Moritz et al., 2014).

An early meta-analysis incorporating a restricted selection of studies found small, non-significant effects of MCT compared to the control condition, on positive symptoms, delusions and JTC (van Oosterhout et al., 2016a). Reanalysis with three additional studies revealed significant effects for positive symptoms and delusions, but not for JTC (van Oosterhout et al., 2016b). Subsequent meta-analyses found significant improvement on the PANSS positive scale (Eichner & Berna, 2016; Jiang, Zhang, Zhu, Li & Li, 2015), and a significant decrease in delusions (Eichner & Berna, 2016), with a moderate effect directly at post-test, and sustaining after 6 months (Liu, Tang, Hung, Tsai & Lin, 2018). A large significant effect was found on subjective acceptance of the intervention (Eichner & Berna, 2016). Furthermore, two more recent meta-analyses compared MCT with other metacognitive interventions. Results show that all investigated metacognitive treatments reported less drop-out rated compared to other forms of treatment, and either more or similar symptom reduction (Philipp et al., 2019). With regard to insight, MCT shows a medium effect for self-reflectiveness, a small effect for self-certainty, and improved cognitive insight (Lopez-Morinigo et al., 2020). MCT is significantly superior to cognitive remediation, and bordering significance when compared to treatment as usual, with respect to symptom reduction. However, a study on cognitive biases reported no differences in outcomes between studies with passive and active control conditions (Sauvé, Lavigne, Pochiet, Brodeur & Lepage, 2020).

Most meta-analyses report significant heterogeneity between the investigated studies, complicating strong conclusions. Furthermore, studies vary in the control conditions used for comparison. Greater effects are reported when comparing to cognitive training, and smaller when comparing to treatment as usual. However, psychotic symptoms generally improve and results on JTC are mixed. MCT is well appreciated, and most effects are found in improved quality

of life, self-esteem, and (meta-)cognitive measures such as memory and self-reflection (Eichner & Berna, 2016). At the same time, distress related to symptoms is reduced.

Single modules and moderators

Adapted versions of the MCT modules on JTC have been used for short interventions to improve reasoning, targeting data gathering and belief inflexibility (Ross, Freeman, Dunn & Garety, 2011), and treatment decision making capacity (Turner et al., 2019). Both studies used an attention task as active control condition. After JTC training, participants showed a significant decrease in JTC, and a trend towards more flexibility and less conviction in their delusions (Ross et al., 2011). Patients showed a large improvement on treatment decision making, compared to the control condition, and this effect was mediated by the reduction on JTC (Turner et al., 2019). However, for participants with an extreme tendency to hasty decision making, the JTC treatment was not beneficial. Work has only just begun addressing which MCT modules or procedures carry the treatment effect (Moritz et al., 2016). Future research may unravel the effective elements of the separate modules and the training as a whole.

Personal factors increasing the effectiveness of MCT treatment are: low self-esteem, increased social anxiety at treatment start, a positive appraisal of the MCT (Moritz, Menon, Andersen, Woodward & Gallinat, 2018), and lower treatment insight (Naughton et al., 2012). Similar characteristics have been reported for the effectiveness of MCT+, where more JTC, lower decision making threshold and low self-esteem in patients increased outcomes (Leanza, Studerus, Bozikas, Moritz & Andreou, 2020). For patients with severe delusions, group MCT might not be the best treatment (Eichner & Berna, 2016; van Oosterhout et al., 2014). The developers of MCT now recommend that patients with severe delusional and disorganised symptoms should rather participate in individualised CBT or MCT+. The reverse is advised for patients who are not ready yet for a direct confrontation with their symptoms (Moritz & Woodward, 2007b). Within the first 2 years after psychosis onset, duration of untreated psychosis does not seem to influence treatment outcomes with respect to symptom severity (Ussorio et al., 2016). And finally, the number of sessions attended also influenced treatment outcomes, irrespective of treatment condition (Moritz et al., 2018). In sum, MCT has most effect in patients with higher general symptoms (low self-esteem, increased social anxiety) and mild to moderate psychotic symptoms, who are motivated to adhere to the training.

Strengths and limitations of MCT

One of the major strengths of the MCT is the backdoor approach. Instead of directly challenging the belief system, MCT aims to give the patient insight that there may be various explanations for an event and that it is better to evaluate it from various perspectives, before forming a firm belief (Kumar et al., 2010; Ross et al., 2011). This makes the acquired skills transferable to other contexts and MCT may be associated with improvements in social and occupational functioning in general (Briki et al., 2014; Moritz et al., 2010; Naughton et al., 2012). The group training as such can also be viewed as a form of social competence training. A second strength is the acceptance and positive experience of the patients. Psychosis patients are difficult to motivate for therapy, and a positive therapeutic experience can only be beneficial for their wellbeing. Additionally, MCT has been shown to be effective not only in high income Western countries, after adaptation of the exercises to the specific culture and language, suggesting the underlying mechanisms to be culture free.

However, a limitation is that not all patients display all cognitive biases addressed in MCT. Therefore, not all modules may be equally relevant for all group members (Moritz et al., 2014). Furthermore, patients with severe symptoms do not benefit from the MCT, but when patients show too little symptoms, a floor effect may appear (Moritz et al., 2011). A third limitation is that treatment stays are often very brief, and for many patients even 8 modules of one cycle would last longer than their treatment duration (Moritz et al., 2016).

Recommendations

To overcome these limitations, some recommendations are presented. When patients are too ill, with severe psychotic symptoms, MCT may not be effective (Turner et al., 2019; van Oosterhout et al., 2014) and MCT+ is recommended. This improvement is also dependent on the number of sessions followed, that is, on motivation and treatment adherence. It is recommended to administer at least 8-10 sessions (including

additional modules), preferably more than 16-20. As an outcome measure, PSYRATS is found to be a more sensitive measure than PANSS. A combination of MCT and MCT+ shows largest reduction of delusional symptoms (Moritz et al., 2011), and ideally MCT is presented in a combination with (some form of) CBT (Moritz & Woodward, 2007b). MCT might precede CBT, ameliorating the cognitive infrastructure maintaining delusional beliefs, which are then more directly challenged by CBT (Moritz et al., 2011). However, symptom improvement is not necessarily the best guide to functional improvement, and it is recommended to include a clinically significant change measure, the Reliable Change Index (Aghotor et al., 2010), and a functional mental capacity measure (Naughton et al., 2012).

CONCLUSION

This practice based review provided a historical overview of the MCT from the first pilot study to recent meta-analyses. From the very beginning, MCT was evaluated by patients as nice to do, fun and useful for daily routines. Almost without any exception, studies reported positive effects on psychotic symptoms. Findings on JTC are mixed. JTC is a strong bias in people with delusions, that is difficult to change with only a brief training intervention (Ross et al., 2011). Overconfidence in errors is reduced (Köther et al., 2017), but other cognitive biases have not been used as outcome measures, hence no conclusions on effectiveness can be drawn. Stable effects are seen in increases of quality of life, delusion distress and conviction, self-esteem, social functioning, usefulness, and memory and self-reflection. In sum, especially general (meta-) cognitive and real life outcome measures improve. Significance of the results depended on the kind of control condition, the number of sessions and patient characteristics. Vulnerability for psychosis has a lifelong impact on social lives and functioning of patients. In view of the existing literature, it seems beneficial and meaningful to administer the MCT at a certain point in treatment.

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A metacognitive remediation group-approach for people with schizophrenia: The metacognition-oriented social skills training (MOSST)

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ABSTRACT. In questo articolo descriviamo il *metacognition-oriented social skills training* (MOSST), un programma in 16 sedute per pazienti con schizofrenia. Il MOSST mira a migliorare le capacità di comprensione e di azione sociale dei pazienti attraverso un allenamento sistematico del funzionamento metacognitivo. Attraverso una serie di compiti - sia di osservazione e descrizione di scene sociali che di role-play - i pazienti imparano a comprendere gli stati mentali, propri e altrui, sottesi al comportamento in vari domini dell'esperienza interpersonale. Nell'articolo verrà illustrata la struttura del MOSST, le abilità sociali target, i diversi compiti che lo compongono insieme con una serie di tecniche volte a massimizzare l'espressione del funzionamento metacognitivo. Tra questi, vi è un certo tipo di comunicazione - chiamata comunicazione mentalizzante - utilizzata al fine di rendere estremamente intelligibili, accessibili e trasparenti gli stati mentali dei conduttori, potenziando così le capacità dei partecipanti di comprendere e riflettere sugli stati mentali altrui e, di riflesso, sui propri. Inoltre, vengono illustrati in dettaglio principi metodologici e modalità di esecuzione del role-play in un'ottica metacognitiva. In ultimo, verranno descritti i risultati di ricerche di feasability e di outcome che sostengono l'utilità di applicare il MOSST con pazienti affetti da schizofrenia, both out- or in-patients.

SUMMARY. In this paper we will describe the metacognition-oriented social skills training (MOSST), a 16-session program for patients with schizophrenia. MOSST aims to improve patients' understanding and social action skills through a systematic training of their metacognitive functioning. Through a series of tasks - both observation and description of social scenes and role-playing exercises - patients learn to understand both their own and others' mental states underlying behavior in various domains of interpersonal experience. The paper will illustrate the structure of MOSST, the target social skills, its different tasks as well as a series of techniques aimed at maximizing the expression of metacognitive functioning. Among these, there is a certain type of communication - called mentalizing communication - used to make the mental states of the conductors extremely intelligible, accessible and transparent, thus enhancing the participants' abilities to understand and reflect on the mental states of others and, consequently, on their own. In addition, methodological principles and methods of performing role-plays are illustrated in detail from a metacognitive perspective. Finally, the results of feasibility and outcome research studies will be described to support the usefulness of applying MOSST with both out- or in-patients suffering from schizophrenia.

Keywords: *Metacognition, Metacognitive interpersonal therapy, Psychosis, Metacognition-oriented social skills training*

INTRODUCTION

Rationale

The metacognition-oriented social skills training (MOSST: Ottavi, D'Alia et al., 2014; Ottavi, Pasinetti et al., 2014) was created to respond to some unsolved problems in the integrated treatment of schizophrenia. It is based on some theoretical and methodological premises.

MOSST is based on a model of metacognition which tends to consider social perception and social action in a unified and interdependent way: there is no perception of the world without some actions on the world (Merleau-Ponty, 1945). Perception and action, thus, constitute two poles of a continuous and inseparable arc of social interaction. We learn to perceive and interpret social signals by acting within social transactions. For this reason, the central learning-action tool in MOSST is the role-play exercise, in which observation, action, and participation coexist and take place together.

Besides, MOSST aims to develop both the reflective and inferential dimension of metacognition, and the pre-reflective and implicit one. In other words, it wants to be as ecological as possible, limiting computer-based or paper-pencil tasks, and maximizing the relational and intersubjective dimension. This happens through the focus on role-play exercises, and on a particular type of communication that we have called mentalizing communication (Ottavi & Menichincheri, 2013; Ottavi & Sabatini, 2012).

Furthermore, MOSST focuses on stimulating in the patients the awareness of both the cognitive and the emotional aspects during social exchanges as well as promoting both third-person and first-person mindreading at the same time.

Being reserved for patients with severe mental illness, MOSST aims to be pleasant, light, and self-motivating to maximize compliance and reduce dropout rates. Finally, having to be implemented in public health contexts, MOSST is structured as to be cost and time effective.

FORMAT

Like most of the interventions of cognitive remedy or social skills training (Bellack, Mueser, Gingerich & Agresta, 2004), MOSST foresees a strong structuring of the sessions. Each session deals with a different social skill, it has a specific order of development, and therefore it requires considerable training of the trainers.

MOSST can be addressed, with some variations, for both chronic and early patients, as well as for in- or out-patients. Exclusion criteria are the presence of mental retardation, neurological disorders/epilepsy, substance abuse for more than six months, and affective psychosis.

Groups should be of from 5 to 10 people. The sessions are sixteen, one per week.

The group is led by two psychotherapists. They should have experience in leading groups with patients with schizophrenia and be trained in the metacognitive approach to psychopathology. Therapists are assisted by a variable number (depending on the structuring of the group) of mental health workers trained to support patients in some MOSST tasks, which we have called metacognitive facilitators (henceforth MF)

Program structure

The structure is themed: each session is dedicated to the exploration of a specific social skill. The social skills chosen as the target of MOSS are 16, as many as the sessions, and divided into 3 domains:

- Conversation skills
- Assertiveness skills
- Conflict management skills.

The Conversation domain includes 4 skills: listening to others, greeting others, keeping a conversation alive, and starting and ending a conversation.

The Assertiveness domain includes 8 skills: making a request, rejecting a request, making compliments, receiving compliments, asking for information, expressing unpleasant feelings, expressing positive feelings, suggesting an activity.

Finally, the domain Conflict management includes 4 skills: negotiating and seeking a compromise, making a constructive criticism, responding to a non-constructive criticism, making apologies. The sequence of the sessions respects the criterion of the progressive emotional complexity of the topics covered. It starts with simple skills and a neutral or positive emotional content and continues towards more complex skills that involve access to negative emotional content.

The social skills are:

1. greeting others
2. listening to others
3. asking for information
4. starting and ending a conversation
5. keeping a conversation alive
6. receiving compliments
7. making compliments
8. making a request
9. rejecting a request
10. negotiating and seeking a compromise
11. suggesting an activity
12. making a constructive criticism
13. responding to a non-constructive criticism
14. making apologies
15. expressing unpleasant feelings
16. expressing positive feelings.

The last session is not the most complex. However, as regards the emotional connotation, it is important to conclude the training with a session in which the patients practice being in a positive mental state, and they share positive feelings with the other members of the group.

Sessions structure

Each session lasts two hours: 60 minutes for the first part, 15 minutes of break, and 45 minutes for the second part.

Part I is that of *observation reflection*: it consists of various warm-up exercises, aimed at stimulating different portions of the patients' metacognitive function (Lysaker, Dimaggio & Brüne, 2014; Salvatore, Dimaggio, Ottavi & Popolo, 2017). About the "Self-reflectivity" sub-function, MOSST has two tasks. The first is: "Remember an episode".

Exercise 1a: "Remember an episode"

> The task consists in recalling a memory of an autobiographical episode in which the patient is confronted with the target social situation. For example, a recent occasion in which he/she found himself/herself in the occasion of wanting to reject a non-constructive criticism, or the last time he/she greeted someone. The conductors ask to answer some questions written on a worksheet and related to the specific episode. The questions are aimed at exercising predominantly the dominion of self-reflectivity, but they do not neglect the understanding of the others' mind and decentering. E.g., for the skill "Greeting others", exercise 1 includes the following questions (the metacognitive subfunction affected by the question is indicated in brackets and in italics, according to the formulation of M.A.S.-a; Semerari et al., 2003):
>
> How (through what behaviors) did you greet the other? (*Behavioral identification*);
>
> What were your thoughts/ideas during this meeting? (*Cognitive identification)*;
>
> How did you feel/what did you experience? (*Emotional identification*);
>
> Did that interaction happen the way you expected? (*Differentiation*);
>
> Make an ABC, in which A = behavior of the other; B = thoughts/evaluations; C = emotion. (*Relationship between variables*);
>
> How do you think the other felt? How would you have felt in the same situation? (*Understanding of Others' Mind and Decentering*).

As mentioned, the questions are preprinted on worksheets that the conductors deliver to the participants at the beginning of each session.

Patients with more skills can fill in the forms on their own, while those with more basic dysfunction are supported by the MFs.

Exercise 1b: "Questions and answers"

> The previous exercise sees the group dissolve temporarily to make the participants work alone or in pairs with the MFs.

In exercise 2, the group re-aggregates to rediscover its function of mutual stimulation and understanding of different points of view. The trainer asks some participants (usually a couple, in rotation) to tell the episode they worked on in exercise 1 and asks them the same questions on the worksheet. In this way the participants are encouraged to assume different and multiple perspectives and to "read" similar or different mental states from their own, thus stimulating the understanding of others' mind and the metacognitive decentering.

A work more aimed at understanding the mental states of others is proposed in the second part of the first phase, called precisely "Understanding others' mind", and includes two more exercises.

Exercise 2a: "Watch a short scene"

> The two trainers play a skit simulating the topic

of the session. The setting and content of the various role-plays of this phase are suggested on worksheets prepared for the trainers. In this phase, the role-plays contain a peculiar feature, which can be the complexity of the mental states involved, and/or the modulation of the mental states of one of the actors based on the other's behavior. An example of complexity is the following skit from session n. 3, "Asking for information":

"The trainer T speaks to the secretary (trainer Y) of a doctor's office where he/she has to book a specialist visit. He/She asks a) the price of the visit, and b) the issuance of an invoice, arousing some reticence in the secretary, who becomes annoyed at the request and insistence. The trainer T shows himself/herself embarrassed in asking these questions and irritated by the secretary's reticence".

An example of modulation of mental states (deducible from the facial expressions and behaviors of the main actor) is the following, taken from session n. 5, "Maintaining conversations": The target subject (T) walks through the streets of Rome with a friend (Y). He admires the landscape and shows enthusiasm (JOY) for the situation. Y talks about novels and new authors, T starts playing with his mobile and yawning (BOREDOM). Y therefore changes the subject and starts talking about cinema, T is now interested, he/she asks questions with an active and participatory attitude, telling a funny anecdote. Y participates in the conversation by adding a detail to the story that causes T's astonishment (SURPRISE).

Exercise 2b: "Questions and answers"

After viewing the skit, participants are asked to write down what they observed on a worksheet, answering questions focused primarily on the mental states of the actors in the skit. The questions, which the participants should answer with the help of the MFs, are the following: How did the protagonist behave? (Facial expressions, tone of voice, gestures, posture, proxemics, and direction of gaze). What might have been the protagonist's thoughts/evaluations? What emotions might the protagonist have felt? How would you have felt in the same situation? What would you have thought? How would you have behaved?

This exercise takes about 10 minutes, after which the trainers question the group, and one of them writes the correct answers on a paper board.

The break to follow, lasting 15 minutes. During this time, the metacognitive trainers and facilitators remain with the group to create an informal atmosphere in which they keep exercising the mentalistic skills of the patients. For example, practitioners can have light and informal conversations with patients, but by revealing their own mental states and asking them questions about their own and others' mental states ("Oh, did you meet your brother yesterday? What did you feel / think when you saw him? And when did he leave? How do you think he felt?").

Part II is reserved for role-playing exercises. It consists of three moments: instructions, execution, and feedback.

Role-play: Instruction

The section reserved for instructions about the target social skill is divided into two parts.

The first, like traditional social skills trainings, consists in collecting, together with the group, a series of behavioral indicators for the target social skill. For example, for the skill "Responding to non-constructive criticism" (session n. 13), the behavioral instruction involves the following steps: a) Look at the other person and speak to him/her firmly, calmly and seriously; b) Point out to the other the behavior he/she had, and how you felt; c) Explain to the person why you think his/her criticism is not constructive (Try to be precise and as analytical as possible); d) Suggest another way to deal with you ("I would like that when it happens that ...", "If you want to tell me this, you could express yourself in this way ...").

The second section of instruction is an original aspect of MOSST. It concerns metacognitive education, that is the indicators of mental states inferable from behavior. The group needs to answer questions on the motivations of the subjects involved in the relational exchange, and the mental states involved. E.g., for session n. 13:

What is the motivation that drives me to reject non-constructive criticism? For example: affirming one's value, being respected, safeguarding oneself, restoring equity.

What could the other person's desire be? For example: communicate and let his/her negative image of us prevail.

In what state of mind could I best refuse a non-

constructive criticism? For example: calmness, firmness, decision, assertiveness, seriousness, anger (functional).

What would I like the other person to feel and think? E.g.: respect, authoritative and more realistic view of us, surprise.

The results of both instructions should be written on a paper board. The answers should emerge from the group brainstorming. To encourage the inquiry, the trainers are supported by suggestions included in the "trainers' worksheets".

Role-play: Execution

At the end of the instruction, the trainers perform a short modeling role-play, and then they start the patients' role-play exercises. In MOSST, the role-plays are performed simultaneously by all patients with the conductors or with the MFs, spreading in pairs throughout the classroom. Furthermore, each patient performs both the target role (for example, the listener) and the reciprocal role (the one who is listened to). In this way, all patients have the opportunity to practice with a sufficiently socially capable partner, such as a facilitator or a group leader. Furthermore, by performing the role-play in isolated pairs, the problem of shame or performance anxiety that often pollute the expression of the role-play is minimized, allowing the subject to get into the role.

Role-play: Feedback

This is the most consistent and innovative part of MOSST. The subjects involved in the role-plays interpret the main and complementary roles alternately, so both provide the other person a feedback immediately after the exercise. The therapeutic feedback is given by the MF (or by one of the conductors) to the patient, and must be characterized by the presence of metacognitive elements. In other words, the feedback should show the mental state of the MF/conductor that was evoked by the patient's action during the role-play. To ease the task, the MFs/onductors are trained to give the feedback according to the Ma.T.E.R. model (Ottavi, Pasinetti et al., 2014), acronym for Marker, Thought, Emotion, and Response.

Role-play: The Ma.T.E.R model

According to the model's indications, the feedback starts from reporting the behavioral markers that caused the given cognitive and affective response in the other person. Then the MF/conductor discloses his/her thought about the patient's behavioral marker and, subsequently, the emotion linked to the thought[1]. Finally, the MF/conductor verbalizes the reaction he/she would manifest in a real situation in response to the patient's social behavior.

E.g., we report a feedback formulated in session n. 8, dedicated to the ability "Making a request". The patient - who actually works as a stock man in a supermarket - asks a colleague (the MF) to grant him a shift change at work because he had to go with his mother to the doctor: "Well, I noticed that you had a warm tone of voice, you looked me in the eye, and you accompanied your request by frowning [*behavioral marker*]. I thought you had a problem and that you were sincere in asking for that shift change because you were in trouble [*immediate thought*]. This made me feel empathy towards you and I felt compelled to help you. I would have felt guilty in refusing your request [*emotion*]. In such a situation I would have accepted your request without problems. If this had had a high cost for me, at least I would have done what I could to accommodate you [*possible response of the other*].

This is a validating feedback, with the purpose of reinforcing a functional social behavior or a pattern of behaviors. The same communicative scheme applies to a corrective feedback, which has the purpose to correct incongruous social behavior on the patient's communicative purposes. For example, in the case you greet a friend with the aim of communicating the surprise and joy of meeting him, but you do it with a serious and still face, with a sad tone of voice, and so on.

A patient (Chiara) performs the role-play "Making a request". The skit involved Chiara asking the MF (in the skit she is a roommate of the group home where she lives) to do the cleaning instead of her.

1. To be noticed, in the section related to emotion, the metacognitive facilitator/trainer should communicate not only categorical emotions (Ekman, Levenson & Friesen, 1983; Izard, 1971; Plutchick 1984), but also the nuances relating to the presence of "vital affects" (Stern, 2010) according to four axes: 1) axis of vitality vs devitalization, 2) axis of restlessness vs calmness, 3) axis of heat/intensity vs coldness/ detachment, 4) axis of coherence vs incoherence.

She makes the request in a cold tone of voice, and with no valid reason for her request. After the role-playing exercise, the MF asks Chiara for a self-evaluation feedback on how she felt, and what mental state she thinks she evoked in her partner. The evaluation that Chiara gives is quite confused both on the side of self-reflection ("I don't know ..., I was normal, but I didn't feel in control of myself") and on that of understanding the others' mind: "Yes ... maybe you understood my request… but I don't know if I convinced you". At this point, it's up to the MF to give her feedback and she does it following the Ma.T.E.R.

"Well, Chiara, I'd like to give you a feedback on what I saw, thought and felt while we were acting. Then you will tell me what you think about it, ok? Keep in mind that what I will say correspond with what I would probably have thought and felt if I had been in a similar real situation, and if I were unaware of your current life situation".

[A premise like this is made only in the first sessions. After the third or fourth session, the patient generally has well understood the exploratory, collaborative, and experimental nature of the feedback, and there is no longer the risk that he can mistake it for a negative judgment.]

"I noticed that you did not show any emotion with your face or voice in expressing your request. You also didn't give me any valid reason to support your request [*behavioral marker*]. This made me think you didn't need to and that you didn't want to get tired doing the cleaning. Also, I tended to see your request almost as a pretense and an attempt at manipulating me, as if I had to accept the change [*immediate thought*]. This reading of your behavior caused me a certain irritation and an urge to rebel against what I saw as an attempt to escape your responsibilities, and to demand something from me that was your responsibility. I didn't understand the reasons for your request, so I felt no emotional participation. So, I felt a desire to fight what I considered a small abuse at that moment [*emotion*]. Probably, if it were a real situation and I didn't know you, I would get stuck, and I wouldn't accept your request, or I'd invent an excuse not to do it [*possible answer of the other*]".

In mentalizing communications (Ottavi & Menichincheri, 2013; Ottavi & Sabatini, 2012) like that, it's important not only what it is said, but also *how* it is said. To affect intersubjectivity, namely the most embodied component of understanding mental states (Gallese, 2003), it is necessary to communicate by making extensive use of the body, especially facial expressions. For this reason, facilitators are trained to give feedback in a very expressive, and in some ways even theatrical way, to make mental states unambiguous and extremely transparent. For example, a MF, in the feedback following the role-play "Receiving a compliment" (session n. 6), wants to communicate a doubt about the patient's intentions. The latter responded to a compliment of his clothing with an expressionless face and no change in his tone of voice. This made the MF questioning whether the compliment met the patient's favor or not. In the *thought* section of the Ma.T.E.R. the facilitator exposes doubtful thoughts to him, accompanying them with gestures and unequivocal facial expressions: he frowns conspicuously and puts a hand to his mouth, as if to reproduce the prototypical posture of the attitude of doubt and uncertainty.

Aims of role-play

The main purpose of role-playing exercises in MOSST is not the correct execution of social behavior. Rather, the aim is to make the patient fully aware of the implicit purposes in his own conduct (for example, the purpose of signaling the positivity of the relationship with an acquaintance through the greeting), and of the effects that his observable behaviors produce in others (e.g., the other person understands the positive signal and becomes vitalized, or notes ambiguity and feels tension), to be able to evaluate whether there is a correspondence between one's own aims/intentions and real effects on the others. This mentalistic awareness should have positive repercussions on the subject's social performance, as it will motivate him/her to model his/her interpersonal behavior to satisfy the desired social goals. More generally, the understanding of the mental states underlying any social behavior is essential to be able to master a wide and flexible range of mastery strategies, and become able to regulate interpersonal relationships, to pursue desires, and to solve conflicts (Semerari et al., 2003).

EVIDENCE

Two trials by Inchausti et al. (2017) tested the MOSST.

First Trial

The first (2017) is a feasability study. 12 participants (10 males, 2 females) were recruited from two mental healthcare services in Navarra (Spain), 10 of them concluded the protocol of 16 sessions. The sample was with a mean age of 36.40 years (*SD* = 11.60), and a median level of secondary education. Candidates met criteria for schizophrenia, schizoaffective disorder, or delusional disorder. Exclusion criteria were concomitant substance abuse, moderate to severe learning disabilities or developmental disorders, major neurological illness, impaired intellectual functioning (*Wechsler Adult Intelligence Scale – IV*, Full Scale IQ score <70).

Measures

Psychosocial functioning was assessed using the *Personal and Social Performance Scale* (*PSP*; Apiquian et al., 2009), and metacognition with the *Metacognition Assessment Scale – Abbreviated* (*MAS-A;* Semerari et al., 2003). In addition, acceptability and subjective impact of the intervention were assessed by a 10 item anonymous self-report scale at the end of each session to evaluate the session's enjoyableness, usefulness and effect on daily social functioning.

Results

Important effects are found on: social functioning ($d = -.83$) measured with PSP, and on metacognition ($d = -.73$), obtained with the MAS-A.

It is worth highlighting the positive progress on psychosocial functioning of patients ($d = -.83$), especially in relation to the increase of useful social activities ($d = 1.01$) as well as personal and interpersonal relationships ($d = 1.61$). The magnitude of these effect sizes was clearly larger than those reported in other studies analyzing the impact of standard SST.

Regarding change in metacognition, MOSST produced overall improvements on self-reflectivity ($d = -.59$) and understanding the other's mind ($d = -.96$). Although some progress on decentering was also observed, these changes were weaker ($d = -.44$).

The large effect of MOSST on psychosocial functioning might be explained in terms of metacognitive gains.

Regarding feasibility, the dropouts rate (16.7%) was acceptable, and was similar to other comparable studies in psychosis.

Second Trial

The second trial (Inchausti et al., 2017) is a randomized controlled trial, published in *Schizophrenia Bulletin*. The outcomes of MOSST (36 patients; 16 sessions) and conventional SST (33 patients; 16 sessions), both in addition to treatment as usual (TAU), were compared; age 18-65. Evaluation at the end of the protocol (4 months) and follow-up at 6 months.

Measures

- *Primary outcomes*

Psychosocial functioning was assessed with the *Social and Occupational Functioning Assessment Scale* (*SOFAS*; Goldman, Skodol & Lave, 1992; Morosini, Magliano, Brambilla, Ugolini & Pioli, 2000) and the *Personal and Social Performance Scale* (*PSP*; Apiquian et al., 2009). Metacognition was assessed with the *Metacognitive Assessment Scale – Abbreviated* (*MAS-A*; Semerari et al., 2003).

- *Secondary outcomes*

Psychotic symptoms were assessed with the *Positive and Negative Syndrome Scale* (*PANSS*) (Peralta & Cuesta, 1994). Depression and anxiety were rated to control emotional distress using the *Beck Depression Inventory – II* (*BDI-II*; Beck, Steer, Ball & Ranieri, 1996) and the *Beck Anxiety Inventory* (*BAI*; Beck, Steer & Garbin, 1988) respectively.

The conventional SST intervention (Bellack et al., 2004) involved 16 weekly group-sessions in which the same social skills and role-playing exercises of MOSST were trained but the therapists did not assist or stimulate the metacognition of participants.

Results

Twenty-two participants (61%) received the full MOSST protocol of 16 sessions. Similarly, twenty participants (60%) received the full conventional SST protocol. Thirty-five (97%) participants in the MOSST and 33 (100%) in the conventional SST received at least 8 sessions of each intervention, which is considered minimal exposure to interventions.

- *Primary outcome: psychosocial outcome*

There were statistically significant between-group differences at post-treatment with large effect sizes in favor of MOSST on the SOFAS (p<.01, between-group d = 1.63) and PSP total (p<.01, between-group d = 1.03). This superior effect of MOSST remained significant at follow-up assessment with also large effect sizes on both SOFAS (p<.01, between-group d = 1.43) and PSP total (p<.01, between- group d = .88).

Concerning the PSP subscales, there were statistically significant between-group differences with large effect sizes in favor of MOSST at follow-up on a) socially useful activities, b) personal and social relationships, and c) disturbing and aggressive behaviors (p<.01, between-group d = −1.15, −.75, and −.74 respectively).

- *Primary outcome: Metacognition*

With regards to the MAS-A scores, there were significant between-group differences on the MAS-A total score with large effect sizes in favor of MOSST at post-treatment and follow-up assessment (p<.01, between-group d = .79 and .70 respectively). Metacognition, as expected, only improves in the MOSST group.

- *Secondary outcomes*

There were significant between-group differences on the BDI-II and BAI mean scores with large or medium effect sizes in favor of MOSST at both post-treatment (p<.01, between-group d = −1.45 and −.70 respectively) and follow-up assessment (p<.01, between-group d = −1.09 and −.99 respectively). No between-group differences emerged on any of the PANSS subscale scores. A subsequent analysis by item found, however, significant relative effects of MOSST on PANSS passive social withdrawal item (N4), anxiety item (G2), depression item (G6), and active social avoidance item (G16) at post-treatment (p<.01, between-group d = −.54, −74, −1.12, and −.62 respectively) and follow-up assessment (p<.01, between-group d = −.57, −.79, −.98, and −.81 respectively).

Both treatments rated positively by the participants, with better ratings for the MOSST in "usefulness of the sessions" and "daily social functioning after the sessions".

CONCLUSIONS

Metacognition-oriented social skills training has proven to be a promising program in the functional recovery of social cognition of patients with schizophrenic spectrum disorders. The considerations that we can draw are:

– We believe that the improvement in social performance can be attributed to the systematic training of the metacognitive function both in the domain of understanding the others' mind and in that of self-reflectivity. The latter is an aspect of originality compared to other metacognitive remediation programs that are based more, if not exclusively, on the theory of mind alone. The basic idea is that to understand social situations and to behave more confidently in them, we must have an understanding of the mental states at stake, and what drives us (purposes, motivations, intentions). We believe that the clarity on our mental states is crucial because the understanding of the others' mind is fully possible only if we can rely on a well-represented library of our own mental states, from which we can "simulate" the mental states of others (Goldman, 2006). Therefore, it is not possible to achieve social recovery by training only the theory of the mind.
– Metacognition can be addressed by means of direct questions to the patient, as well as by displaying therapist's own mind in action, by means of metacommunications or mentalizing communications. Showing the mental functioning of the therapist and the contents that emerge in it during a protected relational exchange (role-play) has an impact on the patient's metacognitive functioning, greatly underestimated in the literature on social cognitive remediation of schizophrenia.
– A well-structured, time-limited, group, and cost-effective program can achieve excellent results in improving the social cognition of patients with schizophrenia if it includes and develops a) both cognition and emotion, b) both third-person and first-person mind reading, c) both observation and action, and participation. Besides, it should be effective on d) both the reflective, inferential dimension and the pre-reflective, implicit one (in MOSST, the latter is addressed both by making the mind of the MF/conductors transparent, and with the "theatrical" characterization of emotions). Finally, e) it must be pleasant (especially with the most serious patients), f) ecological (no computer-based or pencil-paper) and g) massively relational and intersubjective.

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