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The Italian version of Metacognitive Training for the acute psychiatric setting: a pilot study

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Summary. Aim. Metacognitive Training (MCT) is an effective intervention for treating various psychiatric conditions. This pilot study is a preliminary exploration of the use of an Italian version of MCT-Acute, an adaptation for acute care settings. **Materials and methods.** MCT-Acute was administered to inpatients in an acute psychiatric ward, and the outcomes were compared to those of a treated-as-usual (TAU) control group. **Results.** The MCT-Acute group showed significantly greater improvements in global functioning (GAF), internalized stigma (ISMI), and social behavior (SBS) compared to the TAU group. The PANSS subscales also improved significantly. At 12 months of follow-up, the MCT-Acute group had a lower readmission rate and better PANSS and GAF scores. **Conclusions.** Although preliminary, this study suggests that MCT-ACUTE is a feasible and effective intervention in acute care settings, with benefits that may last months.

Key words. Acute psychiatric care, cognitive biases, group therapy, metacognitive training, psychiatry, psychological intervention, psychosis, severe mental illness.

Versione italiana del Training Metacognitivo per il contesto psichiatrico acuto: uno studio pilota.

Riassunto. Scopo. Il Metacognitive Training (MCT) è un intervento efficace per trattare varie condizioni psichiatriche. Questo studio pilota è un'esplorazione preliminare della versione italiana del MCT-Acute, adattamento del MCT per i contesti di cura per pazienti acuti. **Metodi.** MCT-Acute è stato somministrato a pazienti ricoverati in un SPDC e i risultati sono stati confrontati con un gruppo di controllo. **Risultati.** Il gruppo MCT-Acute ha mostrato miglioramenti significativamente maggiori nel funzionamento globale (GAF), nello stigma interiorizzato (ISMI) e nel comportamento sociale (SBS) rispetto al gruppo di controllo. Anche le sottoscale della PANSS sono migliorate significativamente. Al follow-up di 12 mesi, il gruppo MCT-Acute ha avuto un tasso di ri-ricovero più basso e punteggi migliori nelle scale PANSS e GAF. **Conclusioni.** Sebbene preliminare, questo studio suggerisce che MCT-Acute è un intervento applicabile ed efficace nei contesti di cura per acuti, con benefici che possono durare per mesi.

Parole chiave. Assistenza psichiatrica acuta, bias cognitivi, intervento psicologico, malattie mentali gravi, psichiatria, psicosi, terapia di gruppo, training metacognitivo.

Introduction

Metacognition can be defined as the set of abilities required to recognize and attribute mental states to oneself and others based on internal and external stimuli, reflect on mental states, distinguish mental representations from reality, and use information about mental states to make decisions, solve psychological and interpersonal problems, and master subjective suffering[1].

Several studies indicate that people with various psychiatric disorders shows poor metacognitive abilities, with specific metacognitive deficits associated with various psychiatric disorders[2], including schizophrenia[3-6], personality disorders[7], psychotic and non-psychotic depression[8], eating disorders, anxiety and substance abuse disorders[9,10], and PTSD[11].

Metacognitive deficits, such as causal attribution bias and jumping to conclusions, seem to play a significant cross-cutting role in acute phases, affecting mood, problem-solving abilities[12], and, consequently, symptomatic improvement[13], and social and occupational functioning[14].

Metacognitive impairments appear also to be associated with high self-stigma[15] (or internalized stigma), namely, the acceptance and self-endorsement of psychiatric patients of negative opinions and stereotypes attributed to them by society[16]. A high self-stigma, in turn, was associated with the severity of symptoms, risk of suicide, adherence to treatment (a risk factor for re-hospitalization[17]), vocational and social functioning, and poor recovery[15,18].

Although recent studies demonstrate the efficacy of combining pharmacological therapy with metacognitive rehabilitation in acute phases[19,20], the implementation of psychosocial interventions in acute psychiatric wards can be challenging due to several factors, such as lack of trained staff, lack of adequate time and space for interventions, short hospital stay duration, difficulty maintaining attention and drowsiness due to pharmacotherapy in patients in acute

phases, and poor availability of treatments specifically adapted for this setting[21].

Moritz's Metacognition Training (MCT) is a well-established psychological intervention proven effective in addressing some of the aforementioned metacognitive deficits, leading to positive effects on clinical outcomes[22]. Recently, an adaptation of MCT for acute psychiatric settings (MCT-Acute) has been developed and tested with satisfactory results[23].

This work describes the preliminary exploration of the use of an Italian version of MCT-Acute in an acute psychiatric hospital ward, aiming to investigate its feasibility and efficacy in the treatment of patients with severe psychopathological states.

Materials and methods

The preliminary use of our Italian version of MCT-Acute was investigated by administering it to a group of patients in our psychiatric inward for acute phases and comparing the outcome with a treated-as-usual control group (TAU) in the same ward through psychometric tests.

Once authorization was obtained from the authors of the original version (see https://lc.cx/A0Geol), the modules were translated and adapted into Italian through a multicenter effort.

Recruitment of participants

The patients recruited in this study were selected based on the following criteria:

Inclusion criteria:

1. Acute psychiatric patients admitted for inpatient care in our ward.
2. The same diagnoses considered in the validation protocol of the original version of MCT-Acute (see https://lc.cx/7sGFp8) (table 1).

Exclusion criteria:

1. Insufficient ability to express consent/refusal.
2. Inadequate knowledge of Italian.
3. Intellectual disability and dementia.
4. Previous treatment with metacognitive or any psychiatric rehabilitation therapy.

Description of the sample

As shown in Table 2, 8 (30.8%) of the 26 recruited subjects were female, and 18 (69.2%) were male. Regarding admission status, 24 (92.3%) received voluntary psychiatric treatment, while 2 (7.7%) received involuntary psychiatric treatment during hospitalization. Regarding age, the sample had a mean age of 38.27 years (minimum age: 18 years; maximum age: 73 years; standard deviation - SD: 13.84 years)

Table 1. Diagnoses selected in inclusion criteria.

ICD-10 Codes	Syndromes
F20-F29	Schizophrenia, schizotypal and delusional disorders
F30-F39	Mood [affective] disorders
F60-F69	Disorders of adult personality and behavior
F10-F19	Mental and behavioral disorders due to psychoactive substance use
F40-F48	Somatoform and stress-related disorders
F50-F59	Behavioral syndromes associated with physiological disturbances and physical factors
F90-F98	Behavioral and emotional disorders with onset usually occurring in childhood and adolescence
F00-F09	Organic, including symptomatic, mental disorders

and a mean educational level of 12.42 years (min: 8 years; max: 18 years; SD: 3.56 years). At discharge, 7 (26.92%) subjects received a diagnosis within the mood disorders spectrum, 14 (53.85%) within the schizophrenia spectrum, and 5 (19.23%) within the personality disorders spectrum; only one patient in the latter group received an additional diagnosis of substance use disorder. Of the 14 subjects in the TAU group, only one patient (5.6%) underwent involuntary psychiatric treatment. Demographically, eight patients (44.4%) were female, and the remaining 10 (55.6%) were male; the mean age was 43.1 years (min: 20 years; max age: 57 years; SD: 11.57 years), and the mean level of education was 11.17 years (min: 5 years; max: 18 years; SD: 3.7 years). Nine patients (50%) received a diagnosis of mood disorders, 8 (44.4%) received a diagnosis within the spectrum of schizophrenia, and 1 (5.6%) received a diagnosis of personality disorders.

Assessment

Psychometric tests were administered to quantify general psychopathology, levels of anxiety-depressive symptoms, global functioning, and social behavior. Additionally, a self-assessment scale for mental health stigma was included. The assessment was carried out before (T0) and after (T1) the administration of MCT-Acute and at similar times for the TAU group.

The recruited subjects completed the tests before the first session (T0) and the day after they completed the MCT-Acute (T1). Furthermore, at T1, patient feedback was collected through the administration of a satisfaction questionnaire consisting of closed-ended questions on various aspects of the interven-

Table 2. Description of the sample and differences between MCT-Acute and control group.

		MCT-Acute	TAU		
Total subjects		26	18		
				χ^2	p
Gender	Female	8 (30.77%)	8 (44.44%)	0.86	0.52
	Male	18 (69.23%)	10 (55.56%)		
Admission status	Voluntary	24 (92.31%)	17 (94.44%)	3.20	0.23
	Involuntary	2 (7.69%)	1 (5.56%)		
Diagnosis at discharge	Schizophrenia	14 (53.85%)	8 (44.4%)	0.76	1.00
	Mood Disorders	7 (26.92%)	9 (50%)		
	Personality Disorders	5 (19.23%)	1 (5.6%)		
				Z	p
Education level (yrs)	Mean ± SD	12.42 ± 3.56	11.17 ± 3.7	-1.23	0.22
	Min	8	5		
	Max	18	18		
Age (yrs)	Mean ± SD	38.27 ± 13.84	43.1 ± 11.57	-1.16	0.26
	Min	18	20		
	Max	73	57		

tion, such as the clarity of presentation of slides and conductors, the level of comfort during the sessions, and the perceived benefit. At a 12-month follow-up (T2), patients were contacted for a brief interview and reevaluation using the PANSS scale. The TAU group patients were evaluated at time points equivalent to those used for those patients who received MCT-Acute.

Positive and Negative Syndrome Scale (PANSS)

PANSS[24] is a clinical-administered rating scale with proven reliability and consists of 7 items for positive symptoms (PANSS-P), 7 for negative symptoms (PANSS-N), and 16 for general psychopathology (PANSS-G). PANSS items were also studied with a six-factor scoring as follows: Positive (PANSS-Pos, P1+P3+P5+P6+G9), Negative–Expressive (PANSS-Neg-Exp, N1+N3+N6+G7), Negative-Social (PANSS-Neg-Soc, N2+N4+G16), Disorganization (PANSS-Dis, P2+N7+N5+G10+G11+G12+G5+G13), Excitement (PANSS-Exc, P4+P7+G8+G14), and Emotional Distress (PANSS-Emo-D, G1+G2+G3+G4+G6+G15)[25-29].

Hamilton Rating Scale for Depression (HAM-D)

HAM-D[30] consists of 21 clinical-administered items based on a Likert scale. Several studies demonstrated good reliability[31,32] in quantifying the severity of depressive symptoms and evaluating their variation throughout treatment.

Hamilton Anxiety Scale (HAM-A)

HAM-A[33] is a clinical-administered scale that has been proven valid and reliable in quantifying the severity of anxiety symptoms[34]. It consists of 14 items rated on a 5-point Likert scale. A total score of 18 is considered pathological.

Global Assessment of Functioning (GAF)

GAF[35] was included in DSM-III-R and subsequently in DSM-IV (1994) as Axis V for the global assessment of a patient's psychosocial and occupational functioning, regardless of his psychiatric diagnosis. It consists of 10 anchor points. The total score falls on a continuum ranging from maximum functioning (100 points) to the highest level of functional impairment (1 point, associated with severe mental disorder and risk of death).

Social Behavior Scale (SBS)

SBS[36] is a semi-structured interview designed to assess social skills, aggressive or suicidal ideation/behaviors, self-care, and emotional control. This study used a 17-item version and examined total scores and factors, including antisocial behavior (SBS-AB), depressive behavior (SBS-DB), social withdrawal (SBS-SW), and thought disturbances (SBS-TD)[37].

Internalized Stigma of Mental Illness (ISMI)

ISMI[38] is a 29-item self-administered scale that investigates the subjective experience of stigma. Higher

scores indicate a higher level of internalized stigma. It has five subscales: alienation (ISMI-Al), stereotype endorsement (ISMI-St), perceived discrimination (ISMI-Dis), social withdrawal (ISMI-Soc), and stigma resistance (ISMI-Res).

MCT-Acute

MCT-Acute is an intervention of proven feasibility, acceptability, and safety[23]. It was developed to adapt the existing MCT for psychosis and depression[39-41] and focuses on the most frequent cognitive distortions associated with psychopathological experiences in acute episodes[42-44]. Cognitive biases are known to promote the development and maintenance of specific psychiatric symptoms[45,46], even in acute phases[47]. Since the manifestation of psychiatric symptoms is generally the result of a gradual alteration of cognitive, affective, and behavioral aspects[48,49], strengthening metacognitive competence could help prevent future exacerbation. MCT-Acute aims to guide patients towards critical and constructive reflections on their ways of experiencing internal and external reality[50,51] and improve problem-solving skills[52].

MCT-Acute is a group intervention comprising seven modules administered in as many sessions. Modules are designed to be less complex than other MCT protocols and are structured with clearly delimitated phases, allowing facilitators to plan sessions flexibly. Each session follows a basic framework summarized as follows:

- introduction to the topic (empathy, mood, attribution style, stigma, jumping to conclusions, coping strategies, and self-esteem);
- discussion of subjective knowledge of the participants;
- identification of adaptive and maladaptive cognitive styles;
- psychoeducation and proposal of alternative strategies;
- exercises to apply the newly acquired knowledge;
- general conclusions and feedback from participants.

Sessions were held three times a week and lasted approximately 45-55 minutes. At the beginning of each group, there was an introduction in which each participant and the trainers were presented, fostering an initial sense of familiarity.

Statistical analysis

Data were entered into an MS Excel spreadsheet, and statistical analyses were performed using IBM SPSS Statistics software, version 26 for Windows.

Chi-square tests (χ^2) were conducted to investigate categorical variables (diagnosis, sex, voluntary admission). Continuous variables were investigated with the Wilcoxon signed rank test for the variation of psychometric tests at T1 and the Mann-Whitney test for the differences between the MCT-Acute and TAU groups. The effect size (ES) was investigated with coefficient r ($r=Z/\sqrt{N}$), and an ES was considered small, medium, or large when it exceeded the values of 0.1, 0.3, and 0.5, respectively[53].

Results

At T0, no significant differences emerged between the two groups for the parameters considered (table 2).

As indicated in table 3, the variation at T1 of the mean scores of all tests is statistically significant, with almost all showing a large ES.

The comparison between the variations at T1 of the psychometric test scores for the two groups is summarized in table 4. Statistically significant differences were found in the variation of the scores on the PANSS subscales of general psychopathology and symptoms of disorganization, as well as on the GAF and ISMI scales (total score and subscales of alienation, stereotype endorsement, and experience of discrimination), and on the SBS scale (total score and subscales of antisocial behavior, depressive behavior, and social withdrawal), with ES ranging from medium to large, except for the discrimination subscale of ISMI.

Regarding the follow-up period, readmission could be investigated for all 44 study subjects, but only 12 of the 26 in the MCT-Acute group and 8 of the 18 in the TAU group gave their consent to the reassessment of T2. The rate of readmission to the psychiatric ward in patients of the MCT-Acute group (19.23%) was significantly lower compared to the TAU group (55.56%), with a statistically significant difference ($\chi^2= .25$, $p=0.02$).

Furthermore, a statistically significant difference was observed for the mean scores of the PANSS scales (total score, PANSS-G, PANSS-Dis, PANSS-Exc, and PANSS-Emo-D) and GAF at T2 compared to T1 and T0. ES was large in the MCT-Acute group for all variables reported, except for PANSS-Exc (medium ES) (table 5).

Discussion

The Italian version of MCT-Acute appears to be a suitable treatment in the Italian context of acute psychiatric care. None of the participants discontinued treatment or requested to do it. The feedback from the satisfaction questionnaire administered at T1 was generally positive regarding perceived relevance and usefulness, clarity, and administration methods. Additionally, the mean scores of the scales at T1 suggest that the administration of this intervention does not hinder the general improvement of the patients.

Table 3. Results of the statistical analysis of the variation of the scores of the psychometric tests of the group treated with MCT-Acute.

Test	T0 (M ± SD)	T1 (M ± SD)	Z	p	r
PANSS-P	16.50 ± 5.69	9.88 ± 3.77	-4.21	< 0.001	0.83
PANSS-N	13.96 ± 6.26	10.85 ± 3.96	-3.45	< 0.001	0.68
PANSS-G	41.38 ± 11.31	25.27 ± 4.66	-4.46	< 0.001	0.87
PANSS-Tot	71.85 ± 17.20	46.00 ± 9.50	-4.46	< 0.001	0.87
PANSS-Pos	12.38 ± 5.15	7.77 ± 3.30	-4.25	< 0.001	0.83
PANSS-Neg-Exp	7.73 ± 3.69	5.96 ± 1.93	-3.44	< 0.001	0.67
PANSS-Neg-Soc	7.31 ± 4.33	5.00 ± 1.81	-2.92	0.002	0.57
PANSS-Dis	20.38 ± 5.32	12.73 ± 3.17	-4.47	< 0.001	0.88
PANSS-Exc	9.85 ± 4.05	5.00 ± 1.41	-4.31	< 0.001	0.85
PANSS-Emo-D	15.73 ± 6.16	5.04 ± 6.22	-3.90	< 0.001	0.76
HAM-D	11.92 ± 8.24	4.62 ± 4.47	-4.20	< 0.001	0.82
HAM-A	11.81 ± 7.91	4.96 ± 3.41	-3.89	< 0.001	0.76
GAF	31.92 ± 7.76	56.73 ± 7.48	4.49	< 0.001	0.88
SBS-Tot	16.38 ± 5.59	4.92 ± 2.91	-4.46	< 0.001	0.87
SBS-AB	4.42 ± 3.22	1.15 ± 1.35	-4.30	< 0.001	0.84
SBS-DB	4.00 ± 2.73	0.88 ± 0.59	-4.24	< 0.001	0.83
SBS-SW	4.23 ± 3.75	1.81 ± 1.79	-3.64	< 0.001	0.71
SBS-TD	3.73 ± 3.11	1.08 ± 1.29	-3.84	< 0.001	0.75
SBS-prbl-score	3.00 ± 2.02	0.00 ± 0.00	-4.21	< 0.001	0.83
ISMI-Tot	2.06 ± 0.44	1.84 ± 0.36	-3.70	< 0.001	0.73
ISMI-Al	2.06 ± 0.68	1.83 ± 0.58	-3.38	< 0.001	0.66
ISMI-St	1.93 ± 0.44	1.63 ± 0.39	-3.36	< 0.001	0.66
ISMI-Dis	2.12 ± 0.70	1.92 ± 0.64	-2.59	0.007	0.51
ISMI-Soc	2.03 ± 0.64	1.85 ± 0.52	-2.06	0.037	0.40
ISMI-Res	2.21 ± 0.64	2.05 ± 0.53	-2.10	0.035	0.41

The comparison between the data from the MCT-Acute group and the TAU group at T1 appears encouraging. The MCT-Acute group showed a markedly greater improvement in the "global psychopathology" subscale and the "disorganization" factor of the PANSS, suggesting the potential of MCT-Acute to address specific dimensions of psychopathology.

The mean greater improvement in the GAF and SBS score (total score and three factors, antisocial and depressive behavior, and social withdrawal) of the sample is in line with this concept. As mentioned above, GAF evaluates patients from a "global", multidimensional perspective, not limited to psychopathology. The variation in its score for the MCT-Acute group appears to reflect the effects of the intervention on metacognitive performance and coping strategies, which are closely related to personal, social, and occupational life[14].

The greater reduction in ISMI scores in the MCT-Acute group is an expected result, as one of the MCT-Acute modules focuses specifically on stigma, challenging stereotypes about individuals with mental disorders, and attempting to reduce the sense of alienation through normalization. In addition, it provides some advice on how to communicate one's diagnosis, facilitating the request for help and preventing future relapses. Given that one of the aims of psychiatric rehabilitation is to guide the awareness and acceptance of limitations to deal with them in a recovery-oriented management of mental disorders, this result is encouraging and worthy of further exploration, hopefully with a direct investigation of the possible role of insight improvement.

ISMI and SBS include a "social withdrawal" factor, but a statistically significant improvement compared to TAU could be observed only in SBS. A possible reason for this finding could be the disparity between the perspectives of the patients and the observer (ISMI,

Table 4. Comparison of variation T1-T0 of the score of psychometric tests between MCT-Acute and TAU group (statistically significant differences in bold).

Test	MCT-Acute	TAU	Z	p	r
ΔPANSS-P	-6.62 ± 4.24	-7.39 ± 5.77	-0.180	0.863	0.027
ΔPANSS-N	-3.12 ± 3.92	-2.22 ± 2.26	-0.351	0.732	0.053
ΔPANSS-G	**-16.12 ± 8.96**	**-10.06 ± 7.07**	**-2.264**	**0.024**	**0.341**
ΔPANSS-Tot	-25.85 ± 13.76	-19.67 ± 13.12	-1.720	0.087	0.259
ΔPANSS-Pos	-4.62 ± 3.49	-5.11 ± 3.61	-0.697	0.494	0.105
ΔPANSS-Neg-Exp	-1.77 ± 2.52	-1.17 ± 2.85	-0.672	0.509	0.101
ΔPANSS-Neg-Soc	-2.31 ± 3.43	-0.89 ± 1.37	-0.721	0.478	0.109
ΔPANSS-Dis	**-7.65 ± 4.08**	**-3.61 ± 2.45**	**-3.671**	**< 0.001**	**0.553**
ΔPANSS-Exc	-4.85 ± 3.80	-4.28 ± 4.23	-0.651	0.523	0.098
ΔPANSS-Emo-D	-5.58 ± 4.01	-3.83 ± 4.45	-1.401	0.165	0.211
ΔHAM-D	-7.311 ± 5.74	-6.83 ± 5.94	-0.622	0.541	0.094
ΔHAM-A	-6.85 ± 7.13	-7.56 ± 6.21	-0.204	0.845	0.031
ΔGAF	**24.81 ± 7.94**	**18.33 ± 5.15**	**-2.636**	**0.007**	**0.397**
ΔSBS-Tot	**-11.46 ± 4.48**	**-5.61 ± 2.97**	**-4.023**	**< 0.001**	**0.607**
ΔSBS-AB	**-3.27 ± 2.43**	**-1.72 ± 1.93**	**-2.297**	**0.021**	**0.346**
ΔSBS-DB	**-3.12 ± 2.37**	**-1.61 ± 1.20**	**-2.126**	**0.033**	**0.321**
ΔSBS-SW	**-2.42 ± 2.69**	**-0.5 ± 0.79**	**-2.628**	**0.008**	**0.396**
ΔSBS-TD	-2.65 ± 2.24	-1.78 ± 1.63	-1.247	0.219	0.188
ΔSBS-Prbl	0 ± 0	0 ± 0	0.000	1.000	0
ΔISMI-Tot	**-0.22 ± 0.23**	**-0.00 ± 0.12**	**-4.125**	**< 0.001**	**0.622**
ΔISMI-Al	**-0.23 ± 0.33**	**-0.02 ± 0.25**	**-2.721**	**0.007**	**0.410**
ΔISMI-St	**-0.30 ± 0.33**	**-0.01 ± 0.20**	**-3.652**	**< 0.001**	**0.551**
ΔISMI-Dis	**-0.2 ± 0.52**	**-0.02 ± 0.20**	**-1.959**	**0.035**	**0.295**
ΔISMI-Soc	-0.12 ± 0.56	-0.03 ± 0.19	-1.926	0.054	0.290
ΔISMI-Res	-0.15 ± 0.35	0.07 ± 0.35	-1.980	0.052	0.299

Table 5. Comparison of the T2-T0 variations of psychometric tests between MCT-Acute and TAU group: statistically significant differences.

Test	MCT-Acute	TAU	Z	p	r
ΔPANSS-G	-17.8 ± 14.25	3.25 ± 8.58	-2.973	0.002	0.67
ΔPANSS-Tot	-27.9 ± 23.31	-2 ± 16.78	-2.470	0.012	0.55
ΔPANSS-Dis	-8.5 ± 6.23	2.75 ± 6.32	-2.860	0.003	0.64
ΔPANSS-Exc	-5.5 ± 4.58	-0.25 ± 6.14	-2.057	0.039	0.46
ΔPANSS-Emo-D	3.6 ± 8.02	5.86 ± 6.64	-2.403	0.016	0.54
ΔGAF	29.50 ± 11.04	12.50 ±11.02	-2.693	0.005	0.60

unlike SBS, is self-administered), with a possible role of the patient's partial self-awareness. Another explanation could be the tendency of the cited scales to detect the impact of different aspects of mental illnesses on relational life. As a matter of fact, ISMI-Soc investigates active withdrawal as a direct effect of shame from the internalized stigma[37], while SBS-SW explores the social consequences of slowness, lack of concentration, and poor initiative in communication and activity[38].

No statistically significant differences were observed between the MCT-Acute and TAU groups in the variations at T1 of the scores of HAM-D, HAM-A, SBS-TD, ISMI-Soc, ISMI-Res as well as of total and some subscales scores of the PANSS. The timing of the reassessment, related to typically short hospital stays in psychiatric emergency wards, together with possible concurrent psychopharmacological treatment, may have influenced the overall findings. Although the pharmacological component often takes precedence during acute phases due to its well-established short-term efficacy, the multidisciplinary approach remains the gold standard in psychiatric care. MCT-Acute, targeting the cognitive distortions that underlie psychiatric symptoms, appears to be a promising intervention that may not primarily lead to an immediate observable reduction in the severity of acute symptoms but could play a crucial role in laying the foundation for longer-term recovery.

Furthermore, it is essential to remember that psychiatric rehabilitation is not limited to symptom reduction. Its broader objective is to promote comprehensive functional recovery, and in this sense, MCT-Acute holds significant promise as a tool that complements pharmacotherapy and promotes improvements beyond the acute phase.

Consistent with this, the analysis of the follow-up data (T2) shows a more favorable variation in the mean PANSS scores for the MCT-Acute group compared to the TAU group, not only for the same factors discussed for T1 but also for "emotional distress" and the total score. The coherence of T1 and T2 data appears to reinforce the specific dimensions on which MCT-Acute exerts its effects, while the additional improvements observed in these new scores suggest a progressive consolidation of therapeutic benefits over time. A possible explanation for this trend is that MCT-Acute help participants accept their condition, internalize the importance of treatment adherence, and recognize certain experiences as symptoms, thereby fostering enduring and broader improvements in psychopathology.

Additionally, the 1-year rehospitalization rate for acute psychiatric episodes was significantly lower for the MCT-Acute group. These encouraging findings suggest a durable benefit of MCT-Acute.

As previously stated, this study is a preliminary investigation into the applicability of an Italian version of MCT-Acute. However, it has several limitations, the most significant being the small sample size, which is insufficient to fully demonstrate the feasibility and effectiveness of the intervention. Recruitment was undoubtedly affected by the typically short duration of hospitalization, which often does not allow enough time to administer MCT-Acute. The mean duration of the stay in Italy is 12.7 days[54]. As mentioned earlier, this limited timeframe also hampers the comprehensive assessment of changes in psychopathological and functioning indices. The brief stay in acute psychiatric wards is generally incompatible with the time required for MCT-Acute, which includes seven sessions with intervals deemed important for the internalization of content. These constraints limit the investigation of the intervention's impact and highlight the challenge of implementing it within such a short timeframe. Furthermore, some patients (an average 6.2% in Italy)[54] are admitted involuntarily to the ward, often due to a refusal of the proposed treatment, including psychological interventions. This may introduce a potential selection bias, as the patients included in the study are likely those with a minimum level of treatment adherence or longer-than-average hospital stays, which could affect the generalizability of the findings.

The limitation of sample size becomes even more evident at T2, with the dropout of some patients from both groups and, in some of the remaining, the refusal to undergo a detailed evaluation, which could help detect possible differences between groups underlying the improvement of the MCT-Acute group compared to the TAU group.

While MCT-Acute is designed as a transdiagnostic intervention, the diagnostically heterogeneous sample in this study limits the ability to evaluate its feasibility and efficacy within specific diagnostic categories or to identify differences in outcomes across diagnostic groups.

Furthermore, as our study primarily focused on feasibility and effectiveness, it did not explore the potential mechanisms underlying the observed improvements.

However, the results of this preliminary study indicate potential medium-term benefits, warranting further investigation in larger, more comprehensive studies. Increasing the sample size, potentially through a multicenter effort, could help confirm the feasibility and efficacy of the intervention while exploring potential variability among nosological categories. Investigating the administration of MCT-Acute in acute outpatient settings, such as day hospital services, may also be worthwhile, as these settings pose fewer intrinsic environmental challenges[21]. Moreover, the delivery of MCT-Acute – comprising seven almost-independent modules – could begin

in hospital wards and be completed in alternative care settings, such as day hospitals and post-acute residential facilities. This approach could address the mismatch between the average inpatient stays and the duration of the intervention, as well as the potential selection bias discussed earlier.

Furthermore, as some participants reported moderate difficulty maintaining attention throughout the sessions in the satisfaction questionnaire, it may be worthwhile to test the inclusion of breaks, which could align with the modular structure of the sessions.

Future studies could also include an in-depth exploration of mediating and moderating factors to identify specific pathways through which MCT-Acute exerts its effects, such as enhancing cognitive flexibility, improving insight, or fostering more positive attitudes toward medication or psychiatric care. Additionally, implementing shorter-term or multi-phase follow-ups could help reduce dropout rates, provide a more comprehensive evaluation of long-term outcomes, and account for potential variabilities emerging after the intervention.

Finally, in the Italian context, this work suggests that the version employed is applicable for research purposes and potentially for clinical implementation.

Conclusions

The main purpose of this study was to explore the applicability of an Italian version of MCT-Acute in the context of acute psychiatric care in Italy. Although preliminary, this study suggests that the administration of MCT-Acute does not diminish the benefits of the conventional intervention for acute psychiatric episodes in the dimensions explored and may even lead to an improvement in some of these, particularly global functioning and self-stigma. Data on rehospitalization rates suggest that the benefits of MCT-Acute may persist for months. The results of this work are considered encouraging and worthy of confirmation and further investigation.

Conflict of interests: the authors have no conflict of interests to declare.

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