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Brief Title: The Effectiveness and Efficacy of the Combination of the Integrated Psychological Therapy and Metacognitive Training. (ATHSCHIZ) (ATH22-24)

Official Title: The Effectiveness and Efficacy of the Combination of the Integrated Psychological Therapy and Metacognitive Training in Schizophrenia and Treatment Resistant Schizophrenia. This is a Non-randomized Trial. The Therapy Lasts 60 Sessions.

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Abstract

The aim of this study was to evaluate the effectiveness of the combination of Integrated psychological Therapy and the metacognitive training for psychosis. All the subprograms of IPT in 50 sessions and 10 sessions of MCT were offered in two biweekly one-hour sessions. 35 patients with schizophrenia took part in this study. Cognition, symptoms, functional outcome and recovery were assessed with a test battery before the therapy, after the therapy and in a follow-up after 6 months. General linear model and regression analysis were used. Significant effects were found in neurocognition, symptoms, functional outcomes and recovery. Effect sizes were also calculated. Significant effects were also found for the subgroup with treatment resistant schizophrenia in neurocognition, social cognition, symptoms, functional outcome and recovery. Effect sizes were also calculated. This study supports evidence for the effectiveness of the combination of IPT and MCT in Greece.

1. Introduction

Schizophrenia presents a chronic mental health disorder with a high vulnerability and a huge emotional and social burden. Schizophrenia and especially treatment resistant

schizophrenia (TRS) needs evidence-based and recovery-oriented pharmacotherapy and cognitive behavioral psychotherapy and rehabilitation. Pharmacotherapy presents the main therapy for patients with schizophrenia (Huhn et al., 2019; Leucht et al., 2013; Taipale et al., 2018; Wagner et al., 2021).The Integrated Psychological Therapy (IPT) presents an efficacious evidencebased rehabilitation program for patients with schizophrenia (Roder et al., 2008, 2010, 2011, 2013). It is also translated in Greek (Roder, 2007). Our research group has implemented Integrated Psychological Therapy (IPT) the last years in Greece (Rakitzi et al., 2016, 2019, 2020, 2021). There are also other research groups in Greece that implemented IPT (Poulou, 2024). In other words, IPT is well known and established in Greece.

Metacognitive Training (MCT) for Psychosis presents also an efficacious and evidence-based therapy for people with schizophrenia and other psychotic disorders (Moritz et al., 2022; Penney et al., 2022; Veckenstedt & Scheunemann, 2023). MCT is implemented nowadays also in other mental health disorders, such as bipolar disorder and depression.MCT for psychosis is implemented for the first time in Greece in this research

project. This is also the first study, as far as it is known, in which IPT will be combined with MCT.IPT and MCT present two therapy programs which are used in our private practice systematically.The main hypothesis is: The combination of IPT and MCT is effective and

efficacious. The therapy shows improvement in cognition (neurocognition, social cognition), in psychopathology, in functional outcome and recovery.

1. Material and methods

2.1. Compliance with ethical standards

The patients have given written informed consent for their participation in this research project prior to the inclusion of the study. Details which might disclose the identity of the patients were omitted. The authors follow the APA ethical standards.

The authorities in Greece does not prohibit the conducting of research protocols from scientists who treat patients in a private practice. There is no ethical commission which evaluates research projects from scientists in the private sector.

2.2. Study population

The outpatients with schizophrenia were recruited from Dr. P. Georgila psychiatrist and cognitive behavioral psychotherapist and Dr. S. Rakitzi clinical psychologist and cognitive behavioral psychotherapist from their own private practice. All participants were treated by both authors ambulant the last 15 years. All participants are treated monthly by Dr. P. Georgila and participated in individual cognitive behavioral psychotherapy of 30 sessions in the past by Dr. S. Rakitzi.

A motivational interview was conducted with all the patients from Dr. Georgila and Dr. Rakitzi to enhance their motivation for participating in a group cognitive behavioral psychotherapy and rehabilitation. The patients have given written informed consent for their participation in this research project, and they were not paid for their participation. A total of 35 patients with schizophrenia participated in this study.

The inclusion and exclusion criteria of the study were the following: inclusion criteria: patients with schizophrenia between 19-60 years old, an IQ over 80 and patients must be treated in an ambulant psychiatric treatment. Exclusion criteria: Relapse and hospitalization, substance abuse and diagnosis of other psychotic disorders.

Finally, pharmacotherapy was not changed from Dr. P. Georgila during the therapy, after the therapy and in the follow-up evaluation.

2.3. Study design

It is a non-randomized study. Patients were evaluated in a baseline assessment (T1)

and were allocated to the therapy group. Afterwards, they were evaluated in post therapy after 60 sessions (T2) and at a follow up of 6 months after the end of the therapy (T3).

2.4. Therapists

Dr, P. Georgila and Dr. S. Rakitzi were the therapists. Dr. Georgila was the main therapist for the subprograms of IPT cognitive differentiation, social perception and verbal communication and Dr. S. Rakitzi the co-therapist. Dr. S. Rakitzi was the main therapist for the subprograms of IPT social skills and problem-solving and for the MCT for psychosis. Dr. P. Georgila was co-therapist. Both therapists are well trained by IPT and MCT.

2.5. Intervention

IPT is a group therapy for patients with schizophrenia and contains 5 subprograms: Cognitive differentiation (neurocognition), social perception (social cognition), verbal communication, social skills and interpersonal problem-solving and presents an efficacious and evidence-based program for patients with schizophrenia (Roder et al., 2008, 2010). IPT was translated in Greek and was implemented with success from our research group (Rakitzi et al., 2016, 2019, 2020, Roder et al., 2007. IPT was implemented also from other research groups in Greece with very good results (Poulou et al., 2024). In other words, IPT is well known and established in Greece.

All 5 subprograms of IPT in 50 biweekly sessions of 1 hour were implemented in this study.

MCT presents an efficacious and evidence-based group rehabilitation program for many mental health disorders. 10 biweekly sessions of one hour of MCT for psychosis were implemented in this study after IPT. It is the first implementation of MCT in Greece.

The implementation of this therapy was conducted in 8 small groups: 1 (5 patients), 2(2 patients), 3(8 patients), 4(8 patients), 5(3 patients), 6(3 patients), 7(3 patients), 8(3 patients).

2.6. Measures

2. 6. 1 WAIS

WAIS was implemented to all patients from Dr. S. Rakitzi for the evaluation of IQ before

the baseline assessment of this research project (Aster. 2006).

2. 6. 2. Cognition (proximal outcome)

Neurocognition (speed of processing, working memory, visual memory, reasoning and problem-solving) of MCCB were used. Working memory was evaluated with the Letter Number Span using the Greek translation (Gold et al., 1997; Nuechterlein & Green, 2006, Rakitzi, 2007a). The Greek verbal memory test was used to evaluate verbal memory-oral and written (Kosmidou, 2010). Social cognition (MSCEIT-emotional intelligence) of MCCB (Nuechterlein & Green, 2006) and social perception scale using the Greek translation were also used (Garcia et al., 2003; Rakitzi et al., 2007b; Ruiz et al., 2005). A blinded rater (Msc. Clinical psychology) has given the above tests before the therapy, after the therapy and in the follow-up of 6 months.

2.6.3. Psychopathology (proximal outcome)

Psychopathology was evaluated from PRYRAT (Haddock et al., 1999) and PANSS (Lykouras et al., 2005). A blinded rater (M. D.) has conducted the PSYRAT and PANSS before the therapy, after the therapy and in the follow-up after 6 months.

2.6.4. Functional outcome (proximal outcome)

Functional outcome was from WHODAS evaluated (Koumpouros et al., 2018; WHO, 2001). A blinded rater (Msc. Clinical psychology) has given the above tests before the therapy, after the therapy and in the follow-up of 6 months.

2.6.5. Recovery (proximal outcome)

Recovery was evaluated from the Greek version of RAS-DS (Hancock et al., 2019, 2023). RAS-DS is a reliable and valid scale (Hancock et al., 2015, 2019; Honey et al., 2023; Ramesh et al., 2024). A blinded rater (Msc. Clinical psychology) has given the above tests before the therapy, after the therapy and in the follow-up of 6 months.

2. 7. Statistical analysis

SPSS version 13 has been used for statistical analysis. A general linear model for repeated measures was chosen. A general linear model understands and quantifies the relationship between therapy and the proximal outcomes. A Bonferroni correction was made. Confounding variables were controlled. A regression analysis was conducted. A

regression analysis quantifies the strength between the variables (therapy and proximal outcomes) Effect sizes were also calculated. A statistical analysis (general linear model, effect sizes, regression analysis) was conducted for the 35 participants and afterward a second analysis was conducted (general linear model, effect sizes, regression analysis) focusing on the group of treatment resistant schizophrenia (Bortz & Döring, 2002; Cohen, 1988).

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