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FEUERSTEIN INSTRUMENTAL ENRICHMENT IN THE TREATMENT OF OBSESSIVE COMPULSIVE DISORDER: A PRELIMINARY STUDY

Cecilia Smeraldi, Giulia Mazza, Liana Ricci

Department of Clinical Neurosciences, Scientific Institute and University Vita-Salute San Raffaele, Milan

Corrispondenza
Dr. Cecilia Smeraldi
Istituto Scientifico Ospedale San Raffaele Turro, Department of Clinical Neurosciences
Via Stamira d'Ancona 20, Milano, Italy Tel +39/02/26433229;
cecilia_smeraldi@hotmail.com

Abstract

Obsessive-compulsive disorder (OCD) is a severe psychiatric disorder with a high percentage of patients having a poor response to treatment. OCD patients show a cognitive dysfunction relying on the ability of modulation and control of different cognitive skills with the aim of choosing the best strategy at the right time. Feuerstein's theory of Structural Cognitive Modifiability maintains that a mediated learning experience interventional approach can be used to change individual cognitive structures at any age and in any health status. This mediated experience is possible using the Instrumental Enrichment Program (IE). The aim of the study is testing IE utility in OCD patients.

We administered IE to a subgroup of patients, comparing obtained results to patients receiving cognitive remediation therapy (CRT) with non-domain-specific exercises. The two subgroups were similar for clinical and demographic characteristics and received the same pharmacological treatment. Yale-Brown Obsessive Compulsive Scale Scores significantly decreased over time during treatment in both groups, but CRT showed an interaction with time in influencing the effect of treatment, with patients treated with IE showing a better improvement than patients who received CRT. Moreover the clinical improvement in IE group is maintained and increased also after the end of treatment.

Parole chiave: obsessive compulsive disorder, instrumental enrichment program, cognitive dysfunction

IL PROGRAMMA DI ARRICCHIMENTO STRUMENTALE DI R. FEUERSTEIN INTEGRATO NEL TRATTAMENTO DEL DISTURBO OSSESSIVO-COMPULSIVO: UNO STUDIO PRELIMINARE

Riassunto

Il disturbo ossessivo-compulsivo (DOC) ha attualmente un'alta percentuale di pazienti con una scarsa risposta al trattamento di elezione, rappresentato da un intervento integrato di tipo farmacologico e cognitivo-comportamentale. I pazienti affetti da DOC mostrano una disfunzione cognitiva che comporta una difficoltà nel modulare differenti abilità e nella creazione di strategie complesse, flessibili ed efficaci al tempo stesso. R. Feuerstein ritiene che un'esperienza di apprendimento mediato, fornita attraverso il Programma di Arricchimento strumentale (PAS) possa modificare le strutture cognitive dell'individuo qualunque sia la sua età o condizione clinica.

Il presente lavoro mira a verificare l'utilità di inserire un training cognitivo intensivo, svolto secondo la metodologia di Feuerstein, nella riabilitazione di pazienti affetti da disturbo ossessivo-compulsivo. È stato somministrato il PAS a un gruppo di pazienti affetti da DOC, confrontando i dati con un gruppo di controllo sottoposta a cognitive remediation therapy. I due gruppi non differivano per caratteristiche cliniche e demografiche, né per gli altri trattamenti ricevuti. I risultati della Yale-Brown Obsessive Compulsive Scale diminuivano durante il trattamento per entrambi i gruppi ma nel tempo i pazienti trattati con PAS mantenevano o aumentavano maggiormente tale miglioramento rispetto ai pazienti trattati con cognitive remediation therapy.

Key words: disturbo ossessivo-compulsivo, metodo Feuerstein, riabilitazione

Introduction

According to the *Diagnostic and Statistical Manual of Mental Disorders,* obsessive-compulsive disorder (OCD) is an anxiety disorder characterized by recurrent obsessions or compulsions that causes marked distress and interferes with daily functioning. The current understanding of OCD features and treatment response still shows many limits. Chamberlain (Chamberlain et al. 2007), reviewing the available data in 2007, underlines the principal critical points of discussion about OCD treatment, such as the lack of identified specific genetic contributions and the presence of a 40–60% of OCD sufferers that do not respond to appropriate SRI treatment (Kaplan e Hollander 2003; Davidson e Biorgvinsson 2003; Fineberg e Gale 2005). For this reason, different pharmacological and physical augmentation strategies in treatment resistant forms have been studied (Goodman et al. 1990), such as clomipramine, low doses of atypical antipsychotics (Ipser et al. 2006), deep brain stimulation (Atmaca 2013) and transcranial magnetic stimulation (Berlim et al. 2013).

Many psychological treatments have been also developed for OCD. Behaviour therapy (BT), focusing on exposure and response prevention – ERP (Greist et al. 2003) is the elective treatment for OCD (National Institute for Health and Clinical Excellence, 2006) and its efficacy has been demonstrated in several meta-analyses (Abramowitz 1996; Abramowitz 1997; Eddy et al. 2004; Rosa-Alcàzar et al 2008). Cognitive therapy (CT) focuses on the reduction of dysfunctional beliefs about the presence of symptoms and it's particularly focused on inflated responsibility (Salkovskis 1985; Salkovskis et al. 1999; Beck 1995; Rachman 2002; Salkovkis 1989). Initial treatment outcome findings have provided supportive evidence for the efficacy of CT for OCD (Van Oppen et al. 1995; Wilhelm et al. 2009). The knowledge is still controversial: several studies comparing BT to CT have revealed no differences (Cottraux et al. 2001; Emmelkamp et al. 1988; Emmelkamp et al. 1991), although some have shown an advantage of BT over CT (McLean et al. 2001), and others have indicated an advantage of CT over BT (Van Oppen et al. 1995). Meta-analytic studies have generally reported comparable effect sizes for BT and CT for OCD (Eddy et al. 2004; Rosa-Alcàzar et al. 2008). Metacognitive therapy (MT), proposed by Wells (Fisher e Wells 2008), is not focused on the content of thoughts, but on the appraisal and the management of these thoughts. According to this model, metacognitive beliefs and processes are considered central factors in the development and maintenance of OCD. Metacognitive dysfunctional beliefs have two principal domains: metacognitive beliefs about meaning and consequences of intrusive thoughts (e.g. Thought- Action Fusion, Thought- Event Fusion, and Thought- Object Fusion) and metacognitive beliefs concerning the necessity of doing rituals and negative consequences of failure to carry out these rituals. Metacognitive Therapy seems to be effective in reducing obsessive – compulsive symptoms and in modifying metacognitive beliefs and thought-fusion beliefs (Fisher e Wells 2008).

At the present time the diagnosis, sub-typing and treatment response monitoring is facilitated by top-level clinical measures, such as DSM-IV diagnostic criteria and the Yale–Brown obsessive

compulsive scale (Goodman et al. 1989a; Goodman et al. 1989b), but it is becoming increasingly evident that approaching psychiatric entities only in terms of top-level overt symptoms is unsatisfactory (Gottesman e Gould. 2003).

Many studies focused on cognitive dysfunction in OCD, showing that patients do not seem to have generalized impairment across all cognitive domains, but have specific deficits, such as executive functioning (e.g., planning, cognitive flexibility, response inhibition, and decision making) (Kuelz et al. 2004). Indeed, a general agreement appears on the fact that OCD cognitive dysfunction relies on the ability in modulating and controlling different cognitive skills, with the aim of choosing the best strategy at the right time. Moreover, recent researches focused on dysfunction in decision-making, in OCD patients, that seem to need more information and to spend more time in taking decisions, compared to controls (Dittrich e Johansen 2013). This evidence is consistent with current functional models of the disorder that point to the frontal cortex as one of the main structures involved in OCD pathophysiology (Van den Heuvel et al. 2005). Moreover, evidence in literature suggests that alteration in executive functioning is a trait-like variable in OCD and has already been assessed as potential neuropsychological endophenotype associated with its genetic basis (Bannon et al. 2006; Delorme et al. 2007). These results suggest that the Instrumental Enrichment (IE), designed by Feuerstein (Feuerstein et al. 1980), could be a usefull tool in OCD treatment. Feuerstein's theory of Structural Cognitive Modifiability (SCM) maintains that a mediated learning experience interventional approach can be used to change individual cognitive structures at any age and in any health status (Feuerstein et al. 2002). According to SCM theory, human learning occurs either by direct exposure to a stimulus or indirectly via a human mediator between the stimulus and the individual or between the individual and his/her outcome (Hadas-Lidor e Katz 1998). Thinking about thinking processes and explaining them to others, allow people to acquire new strategies and knowledge about the world and their own cognitive functioning (Forsyth et al. 1979). The Instrumental Enrichment Program (IE) allows this mediated experience and includes 14 paper and pencil instruments, each focusing on specific cognitive processes, as depicted in **table 1**.

Table 1. *IE program instruments (Hadas-Lidor 2001)*

Cognitive area	Instrument	Modality
Organization	Organization of dots Analytic perception	Graphic Graphic
Comparison and categorization	Comparison Categorization Transitive relation Syllogism	Verbal, graphic, painting Verbal, graphic, painting, numeric Verbal, painting Verbal, painting
Orientation in space	Orientation in space I Orientation in space II	Verbal, graphic Verbal, graphic
Relations	Temporal relations Family relations Numerical relations Instructions relations	Verbal, graphic, painting Verbal, graphic, painting Verbal, graphic, painting, numeric Verbal, graphic
Social skills	Illustrations (cartoons)	Painting
Integrative thinking	Stencil design	Graphic

The impact of IE has been researched extensively within populations of children and young adults ranging from regular to learning disabled, with intellectual disability, neurological impairment or psychiatric disorders (Feuerstein et al. 2004).

The aim of the present study was to conduct a preliminary investigation on the efficacy of Feuerstein Instrumental enrichment program for patients suffering from OCD. In our hypothesis, IE could be an enhancement of traditional CBT intervention, as it supports the acquisition of knowledge about cognitive functioning and the development of new cognitive strategies. To test this hypothesis we compared IE with computerized cognitive remediation training.

Methods

Sample

The sample included 19 native Italian speakers patients (F = 6, M = 13; age = 37.10 s.d.12.85 years) affected by Obsessive-Compulsive Disorder (DSM-IV criteria; SCID interview), consecutively admitted at our Centre for OCD. Exclusion criteria were: additional diagnoses on axis I; mental retardation on axis II; pregnancy, major medical and neurological disorders, treatment with slow release neuroleptic drugs in the last month before admission; the presence of feature in the obsessions or compulsions that could be exacerbated by the clinical intervention (e.g. obsessive thoughts about cognitive impairment). There were no specific sub-types of OCD in our sample, but patients showed different symptomatology, (checking, contamination, hoarding and ruminations/ intrusive thoughts were the most common). At the admission patients were administered Raven's Coloured Progressive Matrices in order to exclude mental retardation. To be considered for the study they should obtain a score of 3 or 4. Two patients were excluded from the study because they showed a score of two. This exclusion criterion was used to limit the confounding effect of training on cognitive impairment that was not related to OCD.

Patients were assigned to IE group or CRT group following a randomized controlled trial. Physical examinations, laboratory tests and electrocardiograms were performed before the beginning of the study. Patients gave their written informed consent to participate. All OCD patients were drug resistant almost to one treatment and were treated with additional Cognitive-Behavioural therapy (CBT) in an inpatients setting during the first month of the study.

Assessment

Material (test)

All subjects were given a neuropsychological assessment that was administrated by trained technicians of the psychological service. The neuropsychological battery includes the following tests:

- Yale-Brown obsessive compulsive scale. Obsessive-compulsive (OC) symptoms in OCD patients were assessed with the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) (Goodman et al. 1989a; Goodman et al. 1989b), a non-diagnostic clinician-rated scale sensitive to and specific for changes in severity of OC symptoms. The scale has two parts: (1) a target symptom list, on which current obsessions, compulsions and avoidance behaviours are recorded, and (2) a 16-item checklist in which the clinician scores are recorded, each item from 0 (no symptoms) to 4 (extreme symptoms). In the first 10 core checklist items (5 for obsessions and 5 for compulsions), symptoms are rated according to time spent on, interference from, distress

of, and resistance to and control over OC symptoms. Items 11–16 (non-core items), which assess insight, avoidance, indecisiveness, pathological responsibility, pathological slowness and pathological doubting, are not included in the Y-BOCS total score. The Y-BOCS was administered three times: at admission time (T1), after one month of residential treatment (T2) and after two months of non-residential treatment (T3).

- Raven's Coloured Progressive Matrices (CPM) Raven CPM measures clear-thinking ability and was originally designed for young children ages 5:0-11:0 years and older adults. The test consists of 36 items in 3 sets (A, Ab, B), with 12 items per set. The CPM items are arranged to assess cognitive development up to the stage when a person is sufficiently able to reason by analogy and adopt this way of thinking as a consistent method of inference. This stage in intellectual maturation appears to be one of the earliest to decline as the result of organic dysfunction. The Raven's CPM produces a single raw score that can be converted to a percentile based on normative data (Belacchi et al. 2008).

- Iowa Gambling Task – decision making. During this task, the subject is given a loan of play money, and has to make 100 card selections from four decks. The output of each selected card can be either a gain or a gain and a loss of money: decks A and B are "disadvantageous" in the long run because the total gain is lower than the total loss, while decks C and D are "advantageous" because the penalties are lower. The goal of the task is to maximize profit. The score reported is based on the difference between the numbers of "advantageous" minus the number of "disadvantageous" cards selected (net score) (Cavedini et al. 2006).

- Wisconsin Card Sorting Test – problem solving. The WCST is considered to be sensitive to the assessment of frontal cortical dysfunction especially of circuits of the dorsolateral prefrontal cortex and the basal ganglia (Berg 1948). The WCST also provides an index of the individual's capacity for formulation of logical categories and measures the ability to shift from one category to another in answer to a stimulus given by the examiner. The testing procedure was carried out according to standardized criteria. Scoring was calculated considering number of perseverative errors. The cut-off value for WCST was the 75th percentile of the distribution (Ermoli et al. 2005) of 71 healthy controls matched in age and education and tested with the same battery.

- Continuous Performance Test – sustained attention. The Continuous Performance Test (CPT) is a computerised task that measures sustained attention. We used the A–X version, modified by Stratta (Stratta et al. 2000), in which letters are shown serially on a display and subjects are instructed to respond by pressing a key (zero) only when the letter X follows the letter A. Each letter appeared for 200 ms and the subjects had 1s to respond. A total of 150 stimuli were presented over 10 minutes. Feedback was provided: a low tone for correct presses; a high tone for false alarms or misses; and no sound for a correct rejection. In this study, the number of missed targets was used for analysis. The neuropsychological tasks were administered by a trained psychologist. Each baseline cognitive performance measured was rated as "good" or "poor" for each patient. The cut-off value for CPT was the 75th percentile of the distribution (Ermoli et al. 2005) of 71 healthy controls matched in age and education and tested with the same battery.

- Rey-Osterrieth complex figure test. The Rey-Osterrieth complex figure test (ROCF) is used in clinical and research settings to assess a variety of cognitive abilities (Rey 1941). ROCF consists of the direct copying of a complex bidimensional figure and of its recollection from memory after a given delay. The test has proved to be a useful tool to analyse the integrity

of non-verbal memory, visuospatial abilities, planning, organisational and problem-solving strategies, perceptual, motor and visuoconstructional functions. ROCF includes 18 units and the maximum score for each of the two tasks (direct and delayed copying) is 36. Two points are given when the element is correctly reproduced, 1 point when the reproduction is distorted, incomplete but placed properly, or complete but placed poorly; 0.5 point is credited when the element is distorted or incomplete and placed poorly. A zero score is given when the unit is absent or not recognisable. Multiple regression analysis revealed significant effects of age and education on performance of both copying tasks, whereas sex appeared to affect only performance on the delayed copying task

Intervention

Nine patients were administered CRT, with non-domain-specific exercises. CRT is a training based intervention that aims to improve cognitive processes (attention, memory, executive function, social cognition or metacognition) with the goal of durability and generalization. The computer-aided training employed the Cogpack Software (Marker 1987-2012). This computer programme includes different neurocognitive exercises that can be divided into domain-specific exercises, aimed at training specific cognitive areas (verbal memory, verbal fluency, psychomotor speed and coordination, executive function, working memory, attention) and non-domain-specific exercises, which require the use of several functions and involve factors such as culture, language and simple calculation skills.

Eight patients underwent 15 session of IE Treatment that was given during individual sessions by therapist trained in this method. Each session was divided into three different phases: the first one included cognitive exercises to improve specific cognitive skills. The second part included an analysis of the performance of the paper-and-pencil exercise, with a focus on cognitive strategies. The third phase included examples from daily life situation like work, relationship and disease consequences.

The treatment included selected pages of Organization of Dots, Comparisons and Analytic Perception instruments. Organization of Dots provides practice in projecting virtual relationships. The projection of a potential relationship requires that the learner search for meaning among otherwise separate phenomena. Through repeated practice and successful completion of progressively more difficult exercises, the instrument encourages task-intrinsic motivation and activates a variety of cognitive functions: the ability to define a problem, the selection of dots that are relevant to the figure that is sought, planning behaviour, hypothetical thinking and use of logical evidence and summative behaviour.

The Comparisons Instrument's aim is to increase an individual's ability to differentiate between parameters of comparison and to develop the cognitive functions involved in comparative behaviour. Individuals train to organize and integrate data into organized and meaningful systems. This instrument involves different cognitive functions, such as the ability to keep in mind a great number of parameters during information processing, to make a plan that will take into account the complexity of the tasks, to make hypothesis and hypothesis testing to evaluate the alternative response and the possibility to select relevant reference points.

The Analytic perception instrument enhances one's ability to differentiate (divide a whole into its parts) and integrate (join parts into a whole) by projecting the relationships between the parts. As a result, patients increase their ability to differentiate between inner and external sources of reference. They learn to learn, and selectively use, internal referents to process information and to structure and re-structure their different life experiences. The cognitive functions involved in this

instrument are: the ability to make a spontaneous comparison to model, to establish relationship between parts, and to establish relationship between the parts and the model.

A two sample t-test analysis for independent groups was performed to exclude any clinical and demographical difference between the two groups.

Statistical Analyses

To investigate the influence of factors affecting clinical response, changes in Y-BOCS scores (i.e., Total score, Obsessions and Compulsions' subscales) over time were used a General Linear Model [GLM, 17-18] with a repeated measures ANOVA. Y-BOCS scores were introduced as dependent variable, time was the within-subjects factor, and treatment (CRT vs IE) and age were considered as between-subject factors.

Results

Clinical and demographical characteristics of the sample (mean ± standard deviation, SD) are shown in **table 2**. No difference was found between the patients at baseline.

Table 2. *Clinical scores at Baseline and demographic characteristics of the patients (mean ± SD) divided according to the neuropsychological treatment*

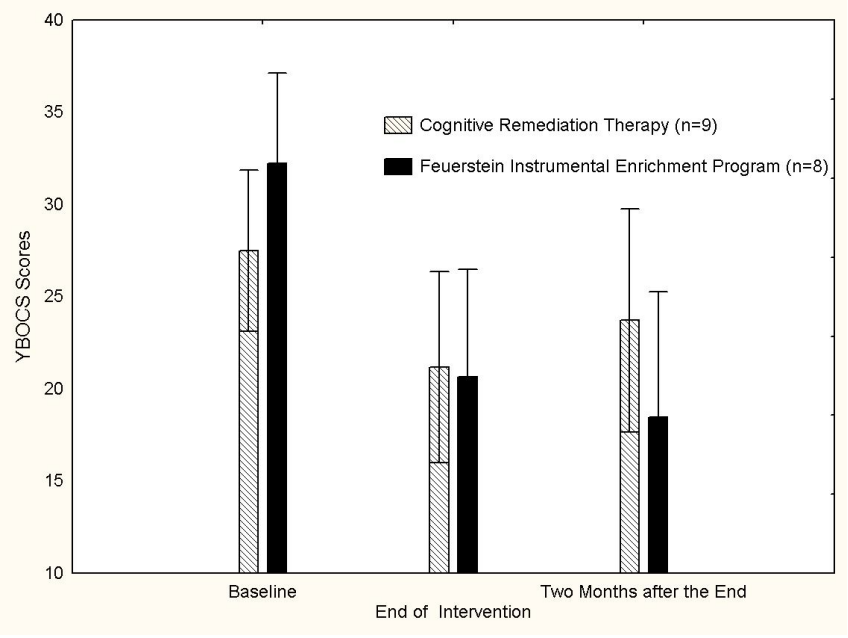
	Cognitive Remediation Therapy (n=9)	**Instrumental Enrichment Program (n=8)**
Age	35.66±10.99	39.87±16.13
Age at onset	16.44±6.93	14.5±8.1
Education (years)	13.89±2.02	12±2.72
Baseline YBOCS Score	29.22±0.06	33.75±4.13
Baseline YBOCS Score (Obsessions)	15.44±2.29	17.25±2.05
Baseline YBOCS Score (Compulsions)	13.78±3.42	16.5±2.44
Continuous Performance Test Missing Responses (n)	9.89±13.12	12.75±9.13
Iowa Gambling Task Response To Positive Feedback (n)	49.22±6.65	46.75±13.51
Wisconsin Card Sorting Test Perseverative Errors (n)	11.44±0.57	8.25±14.70
Rey-Osterrieth Complex Figure Copy Score	24.30±0.80	25.72±12.07
Rey-Osterrieth Complex Figure Recall Score	14.36±0.86	15.12±10.31

Total Y-BOCS scores significantly decreased over time during treatment in both groups (F= 4.497; p=0.020), but the neurocognitive program showed an interaction with time in influencing the effect of treatment (F=4.923; p=0.015), with patients treated with IE showing a better improvement than patients who received CRT. The difference in interaction between cognitive intervention and time in influencing clinical features was found also when considering scores for both obsession (F=4.444; p=0.021) and compulsion (F=4.821; p=0.016).

When considering only the first part of the study (Y-BOCS scores at baseline and the day of the discharged from the hospital), no difference was found between the two treatment groups (F=2.998; p=0.105). On the other hand, when we considered also the two months after the end of neuropsychological intervention, an interaction between type of intervention and time in influencing clinical improvement was found (**figure 1**). The GLM analysis yielded a significant effect of the whole model on changes in severity of the disorder (R^2=0.381, p=0.034), indicating that the included factors significantly explained the observed Y-BOCS score improvement.

(MT)

Figure 1



Discussion

The theory of structural cognitive modifiability posits that human beings can overcome obstacles that have traditionally been considered barriers to change (e.g. aetiology, severity of condition and critical developmental periods) and postulates that human mental and behavioural structures can be modified as a consequence of exposure to conditions that precipitate change (Feuerstein 2012). The mechanism to produce change is the provision of mediated learning

experience (MLE), a planned, intentional and active process that focuses, interprets, elaborates and generalizes the learner's direct experience with the world.

This is the first preliminary study about the efficacy of Feuerstein Instrumental enrichment program in the treatment of OCD patients; to test our hypothesis we compared IE with CRT. We found a clinical improvement in patients that underwent the IE. This effect was maintained also after the end of treatment, at three months of follow-up. The significant improvement of OCD symptomatology in both groups might suggest that IE, as well as CRT, play a role in OC symptoms' improvement. Moreover, as both models incorporate key elements of traditional CBT, we suggest that, indirectly, they might confirm the efficacy of CBT. We found a significant difference between the use of IE and non-domain-specific exercises in CRT, when considering the period after hospital dismissing and the end of both daily CBT and neuropsychological intervention. While patients administered with the IE maintained the obtained improvement over time, patients administered with CRT partly lost their progresses.

IE is supposed to influence individual cognitive structures and it seeks to sharpen critical thinking with the concepts, skills, strategies, operations, and attitudes necessary for independent learning; to diagnose and correct deficiencies in thinking skills. There are three phases of cognitive functioning: Input — Elaboration — Output. At the input phase, information is taken in; at the elaboration phase information is processed through association with previous knowledge; and at the output phase the results of the processing are conveyed. In Feuerstein theory each phase has specific thinking abilities or skills, which can be taught by I.E. (Feuerstein et al. 2008).

Considering our OCD patients sample, the cognitive strategies involved in the I.E. were as follows:

- INPUT
    1. Using our senses (listening, seeing, smelling, tasting, touching, feeling) to gather clear and complete information (E.G. organization of dots : do not ignore a dot or use it twice to make a figure)
    2. Using a system or plan so that we do not skip or miss something important or repeat ourselves (E.G. analytic perception : make sure to read instruction and to make the right connection with figure to have a better comprehension of the exercise and to make a strategy)
    3. Deciding on the characteristics of a thing or event that always stay the same, even when changes take place (E.G. analytic perception : recognize the same part in complex figure, in spite of change in position)
    4. Organizing the information we gather by considering more than one thing at a time (E.G. comparison: to consider at the same time differences and similarities between things)
- ELABORATION
    1. Using only that part of the information we have gathered that is relevant, that is, that applies to the problem, and ignoring the rest (E.G. comparison : chose the main criteria for a comparison)
    2. Making a plan that will include the steps we need to take to reach our goal (E.G. organization of dots : make a planning of the work)
    3. Thinking about different possibilities and figuring out what would happen if you were to choose one or another (E.G. organization of dots: thinking about different strategies

to find the figures and chose the best one)

- OUTPUT
    1. Restraining impulsive behavior (E.G. organization of dots: do not try to make a figure, but make hypothesis and chose the right one before writing)

Conclusion

This is the first preliminary study about the usefulness of Feuerstein Instrumental enrichment program in treatment of patients affected by OCD. We found a statistically significant improvement in OCD symptoms in patients administered with IE, being maintained also at the end of treatment.

All patients included in the study were drug resistant and were treated with additional CBT in an inpatients setting during the first month of the study. Patients were divided into two sub-groups and followed two different treatments, namely, IE and cognitive remediation therapy. Within the first period we found an improvement in OCD symptomatology in both groups, confirming the efficacy of overall CBT in OCD. We found a significant difference between the use of IE and non-domain-specific exercises in the context of CRT. When considering the period after hospital discharge and the end of CBT and neuropsychological intervention, patients administered with IE both maintained symptoms' improvement, but they also enhanced it, while the other patients partly lose it.

IE is supposed to influence individual cognitive structures, meaning the way of thinking and not the content of the thoughts. Considering all these issues, we suggest that during the first period, when IE was administered, patients acquired knowledge about their own cognitive functioning, as well as new cognitive strategies, through time and practice. This in turn resulted in ad improvement in OCD symptomatology. This finding is in line with the overall goals of IE, such as to increase the capacity of the human organism to change, the promotion of introspective thought and intrinsic motivation, the transformation of a learner's passive learning style into a more active one, and an information – generating learning style.

A limitation of the current study was the small, non-probability sample of convenience. The sample dimension was limited by clinical factors (e.g. criteria of inclusion or drop-out due to training intensity). Another limit of the present study is the different kind of intervention as we compared a computer-based intervention with traditional *Vis a Vis* individual session. This limitation could influence our findings, although we tried to deal with his issue making all sessions highly structured, in order to limit therapist influence. This is a preliminary study and further research, considering higher simple sizes, a longer treatment and follow up is needed to confirm our findings.

Instrumental Enrichment program could be a useful intervention in OCD therapy, but further research, considering higher simple sizes, longer period of treatment and follow up, is needed to confirm our findings.

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