

Effectiveness of Neuropsychoeeducation, Intrinsic Motivation, and Metaphoric Content Integrated with Cognitive Behavioral Therapy in the Treatment of Obsessive-Compulsive Disorder: A Pilot Study

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Abstract

Background: Obsessive-compulsive disorder (OCD) is considered frequent, unnecessary thoughts that lead to repetitive actions to lessen the apprehension provoked by thoughts; this repetitive sequence may further influence trouble in one's daily activities. The remedial procedure for OCD includes medication (such as SSRIs, anxiolytics, and antidepressants) with psychotherapy [such as cognitive behavioral therapy (CBT) and exposure response prevention (ERP)]. Previous investigations indicated that regardless of the trend of adopting CBT and ERP to treat OCD, only around half of the patients experienced a full reduction in symptoms.

Purpose: The ERP component in CBT has been termed as a challenging treatment as it contains threatening anxiety-provoking indications, and it has been reflected that between 25–30% of OCD patients reject the ERP treatment, and the refusal and dropout rates for ERP in OCD are higher than other interventions. Thus, in the present investigation, researchers developed a proposed therapy that includes neuropsychoeeducation, intrinsic motivation, and metaphoric content integrated with CBT in addition to regular pharmacological management to treat OCD patients and validated the efficacy of the proposed therapy through psychometric ratings (Y-BOCS).

Method: In this pilot study, 10 cases of OCD received a 12-week proposed therapy program. The primary outcome was the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), which was assessed at baseline and post-treatment.

Results: The present study's results revealed a significant decrease in scores on the obsessions and compulsions domains and overall total scores on Y-BOCS among OCD patients.

Conclusion: The findings show that this proposed therapy, which includes neuropsychoeeducation, intrinsic motivation, and metaphors contents integrated with CBT in combination with pharmacological management, is effective in the treatment of OCD. Therefore, the proposed therapy may be beneficial in the treatment of OCD. It has far-reaching implications in the areas of clinical, psychiatry, and mental health.

Keywords

CBT, OCD, neuropsychoeeducation, metaphors, intrinsic motivation

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Introduction

Obsessive-compulsive disorder (OCD) highlights an example of undesirable thoughts and worries (obsessions) that lead to tiresome ways of behaving (compulsions). These obsessions and compulsions obstruct everyday exercise and are a source of huge trouble. According to the ICD-10 Classification of Mental and Behavioral Disorders,

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“The essential feature is recurrent obsessional thoughts or compulsive acts. Obsessional thoughts are ideas, images, or impulses that enter the patient’s mind again and again in a stereotyped form. They are almost invariably distressing, and the patient often tries, unsuccessfully, to resist them. They are, however, recognized as his or her own thoughts, even though they are involuntary and often repugnant. Compulsive acts or rituals are stereotyped behaviors that are repeated again and again. They are not inherently enjoyable, nor do they result in the completion of inherently useful tasks. Their function is to prevent some objectively unlikely event, often involving harm to or caused by the patient, which he or she fears might otherwise occur. Usually, this behavior is recognized by the patient as pointless or ineffectual, and repeated attempts are made to resist. Anxiety is almost invariably present. If compulsive acts are resisted, the anxiety gets worse.” As OCD interferes in one’s life and troubles their daily routine, there is a need for an effective treatment that gives relief from these symptoms; if these symptoms are left untreated, they may lead to unfortunate consequences and a poor prognosis.¹ With legitimate treatment, individuals with OCD can recapture command over their lives and feel critical alleviation from their side effects. A review of the literature suggested that two therapies, namely, drug therapy (SSRIs, antidepressants, and anxiolytic) and psychotherapies [such as cognitive behavioral therapy (CBT) and exposure response prevention (ERP)] worked together effectively to treat OCD.^{2,3} van der Heiden et al. found that regardless of the remarkable viability of ERP for OCD, with 60% of patients recovering and 25% effectively treated and relieved, the dropout rate was 25%, which is pretty high.⁴ In ERP, exposure to disturbing thoughts represents a certain threat, and elevated degrees of emotional arousal and uneasiness might represent high dropouts.⁵ In contrast to traditional CBT with ERP therapy, the present investigation aimed to study the proposed psychotherapy, which includes an integrated blend of three components, namely, neuropsychoeeducation,⁶ intrinsic motivation, and metaphoric contents with CBT (without using direct ERP) in combination with regular pharmacological management to treat OCD patients and validate the efficacy of the proposed therapy through psychometric ratings using the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS).

Objective: To determine the efficacy and validate the proposed psychotherapy in which the components of neuropsychoeeducation, intrinsic motivation, and metaphoric content are integrated with conventional CBT for the treatment of OCD.

Hypothesis: Integrating components of neuropsychoeeducation, intrinsic motivation, and metaphoric content in CBT would be beneficial in treating OCD.

Methods

Sample: The sample for the present investigation comprised 10 consecutive cases of OCD drawn from the general neuropsychiatric OPD of the NHS Hospital, Jalandhar, Punjab, India. All the subjects had active symptoms of OCD and were diagnosed as having OCD as per ICD-10.⁷ These subjects had total scores of ≥ 16 on the Y-BOCS. Furthermore, subjects were treated with proposed psychotherapy in addition to the regular pharmacological management (12-week program with the first eight sessions per week and the next two sessions with a gap of 2 weeks from the last session, that is, 10 sessions in all and each session duration time limit within the range of 45–60 minutes). The age group of the sample was above 18 years. Purposive sampling was done as the participants meeting the inclusion and exclusion criteria were taken into the sample. Prior consent from participants was obtained. Scores of participants were procured on Y-BOCS pre- and post-intervention, that is, at the completion of 10 sessions.

Inclusion Criteria for the Participants: (a) Age above 18 years, (b) participants must have active OCD symptoms qualifying for an OCD diagnosis as per the ICD-10 criteria, (c) those who scored a total score of ≥ 16 on Y-BOCS, and (d) those who were willing to participate.

Exclusion Criteria for the Participants: (a) Those who scored below 16 of the total score on Y-BOCS, (b) patients suffering from any severe medical illnesses, (c) patients suffering from organic disorders such as epilepsy or neurological disorders, (d) patients with psychoactive substance use disorder, (e) patients who received any form of psychotherapeutic treatment for OCD at any time in the past, and (f) patients having any comorbid psychiatric illness.

Tool Used – Y-BOCS: The Y-BOCS is a standardized rating scale designed to identify the frequency, interference, and distress associated with obsessions and compulsions. The Y-BOCS consists of 10 items pertaining to obsessions and compulsions that are rated on a 5-point Likert scale ranging from 0 (no symptoms) to 4 (severe symptoms). The Y-BOCS has been shown to possess high internal consistency and validity.⁸

Proposed Psychotherapy: This therapy was a combination of neuropsychoeeducation and motivational content, disseminated by the extensive use of metaphors. The initial sessions aimed at imparting knowledge, whereas the mid and end sessions focused more on generating intrinsic motivation. The uniqueness of this therapeutic model for OCD is that it emphasizes the self-directedness of the client in terms of initiating the process of change. In exposure and response prevention (ERP) therapy, the stress is mainly on getting exposed and preventing the response in the clinical setting under the direction of a therapist. However, the proposed psychotherapy concentrated more on making the client

confident enough to ignore the obsessions and restrict compulsive acts on his own. Similar to the constructs of habituation and extinction as explained by ERP in the process of treatment, the proposed therapy also used the same constructs but without clinical setting-based exposure methods. Rather, the clients were empowered by making them knowledgeable about the fundamental theories behind the process of obsessions and compulsions. This comprised detailed basic knowledge about the disorder, including the criteria, prevalence, etiology, biological basis, and brain-circuitry; the inter-relationship among thoughts, emotions, and actions; about the structure of the mind and its functioning; along with the ideas of habituation and extinction. The basic knowledge helped the clients eradicate or decrease the fear, confusion, and myths regarding their suffering. Sessions also included advanced knowledge about the neurological and psychological aspects like neuroplasticity, learned helplessness, the anxiety curve, thought-action fusion, and the theory of hope, which helped the clients overcome their ambivalence and resistance toward change. It also empowered them to tolerate the anxiety and ignore the obsessive thoughts, leading to response prevention. This sense of empowerment intrinsically motivated the clients toward self-directed behavioral changes, which included restricting compulsive acts. This combination, in turn, helped the clients inculcate insight in the least threatening way, surpassing their resistance and reaching the unconscious, which is otherwise difficult to attain. Eventually, this led to adequate treatment adherence and better outcomes. Hence, in totality, the integration of these three components, namely, neuropsychoeeducation, intrinsic motivation, and metaphoric language, served as a blend in the basic framework of CBT in every session, worked together and empowered the clients to handle their obsessions and compulsions on their own without the need of excessive external support from the therapist, even during the therapy. Patients continued to receive regular pharmacological management under the supervision of their neuropsychiatrist in addition to the proposed therapy.

Procedure

All the participants in the present investigation were from the NHS hospital in Jalandhar, Punjab. Purposive sampling was done as the participants meeting the inclusion and exclusion criteria were taken into the sample. Scores of patients (pre- and post-intervention) were procured through Y-BOCS. The intervention given to OCD patients has been explained below.

Session 1: In the first session of the intervention, the therapist emphasized the self-directedness of the client to facilitate the process of change in the patient. In this session, the therapist provided information regarding their disorder's causal and basic mechanisms. In neuropsychoeeducation, knowledge regarding the disorder criteria, prevalence, etiology, biological basis, and brain circuitry was discussed. Through this session, patients were able to understand OCD

in detail, which led them to decrease the fear, confusion, stigma, and myths regarding this disorder. The session ended with giving homework tasks in which patients were instructed to revise this session's content daily and were asked to fill out the provided template of the daily activity chart for the coming week to assess the client's daily schedule (in terms of available free time, level of physical activity, sleep pattern, and so on).

Session 2: In the second session, the therapist reviewed the daily activity chart and gave suggestions accordingly (e.g., to maintain a proper sleep-wake schedule, adequate physical exercise, and constructive day scheduling). Furthermore, the TEA model was used to explain the interrelationships between thought, emotions, and actions. In this session, metaphorical examples were used to explain the physiological and psychological aspects of the brain versus mind and the role of psychotherapy and pharmacological management in OCD. The session ended with giving the homework tasks, in which they were reminded to revise the sessions' content daily and maintain a physical exercise routine for at least 30 minutes daily. The importance of exercise and its benefits in treating OCD were also discussed in brief.

Session 3: In the third session, the therapist reviewed the content of previous sessions to further clarify and motivate the clients. In this session, the iceberg theory of mind was discussed in order to explain the structure and function of the mind. Furthermore, diaphragmatic breathing was introduced to the clients, and they were asked to practice it twice a day for 5–7 minutes as a homework task. The session ended with reminders about revising the previous sessions' content, doing 30 minutes of daily physical exercise, and doing diaphragmatic breathing twice daily.

Session 4: In the fourth session, the therapist described the concepts of learned helplessness and the importance of hope to keep the clients motivated and encouraged to engage in the change process. Furthermore, to ignore their obsessions, which will lead to habituation and extinction of the obsessions, the camel-effect analogy and anxiety curve were explained to clients in experiential ways and motivated them to do this task regularly to overcome the OCD. The session ended with a reminder to continue daily revision, physical exercises, and diaphragmatic breathing. Additionally, clients were asked to follow the camel-effect analogy to ignore the obsessional thoughts and recommended to watch a comedy show for at least 30 minutes daily as a technique of conscious efforts to practice remaining happy.

Session 5: In the fifth session of the therapy, the therapist showed a few shortlisted video clips (Source: YouTube; Max New York Life Insurance Commercial – House)^{9–11} to demonstrate and explain the process of habituation, which included how to ignore obsessive thoughts without giving them importance. The goal of this session was to explain to the clients that it was not about stopping thoughts but compulsive acts. Additionally, in this session, the therapist

Table 1. Summary Table Showing Means, Standard Deviations, and t-Test Values of Pre-intervention versus Post-intervention Scores of OCD Patients (N = 10) on Y-BOCS.

Variables	Pre-Intervention		Post-Intervention		df	t-Test Values (p-value)
	Mean	SD	Mean	SD		
Obsession (Y-BOCS)	15.6	2.01	8.3	2.45	9	9.42** (0.00**)
Compulsion (Y-BOCS)	14.1	2.23	5.8	2.15	9	8.80** (0.00**)
Total Score (Y-BOCS)	29.7	2.91	14.1	3.67	9	9.97** (0.00**)

introduced the concept of counting blessings in their daily lives by making a list of gratitude and the benefits of an attitude of gratitude that lead to happiness and acceptance of sorrows in their lives. The session ended with a reminder about previous sessions' content and tasks and told them to make a "shukrana list" (gratitude journal) to make them realize that life is not all about pains but the positives as well.

Session 6: In the sixth session, the clients were asked to quickly recall the main ideas discussed in the till-date sessions, followed by the therapist summarizing the content. It refreshes previous knowledge and assists the therapist in assessing the client's efforts and motivation in the therapeutic process. Then the science of neuroplasticity was explained and demonstrated with the help of a couple of short videos (Source: YouTube; Superior Society).¹² In neuroplasticity, the therapist defined that the brain has an amazing ability whereby, through changing one's behavior, one could essentially reprogram the way one's brain works physically. More specifically, this relates to OCD, where it can be realized that by stopping oneself from compulsions, one can destroy the already established neural network (*on the principle of "Use it or Lose it"*) and can rewire one's brain by creating new neural pathways for better outcomes (*on the principle of "Neurons that fire together, wire together"*). Additionally, interactive discussions were promoted by talking in-depth about neuroplasticity and its association with the earlier learned concepts of the camel effect, habituation, and anxiety curve. The session ended with a reminder about previous sessions' content and tasks, and the clients were given a four-page information sheet on "*Cognitive Distortions*," written in layman's terms, which they were asked to read and reflect on during the next session.

Session 7: In the seventh session, the therapist discussed cognitive distortions in detail, specifically the concepts of an *inflated sense of responsibility, minimization and maximization, emotional reasoning, thought-action fusion, and catastrophizing*, which are the prominent ones in maintaining obsessive-compulsive symptoms. Additionally, the therapist described the role of Jeffrey Schwartz's 4Rs model (namely, *Relabel, Reattribute, Revalue, and Refocus*) and Martin Seligman's theory of *Learned Helplessness* by using various metaphors to help the clients feel supported and

motivated in the process of change.^{13,14} The session ended with a reminder about the homework tasks of daily revision, physical exercise, diaphragmatic breathing, ignoring obsessive thoughts, and laughter exercise daily.

Session 8: In the eighth session, the therapist revised the content of previous sessions to clarify and motivate the clients and discussed about the importance of the homework task with role play/role reversal to assess and practice the clients' learning.

Sessions 9 & 10: The therapist reviewed the clients' efforts and revised the content of previous sessions in these two sessions, which were held every two weeks after the previous session, to clarify and motivate the clients to be consistent with their homework tasks and clear their doubts.

Statistical Analyses

Means, standard deviations, and paired t-tests for within-group comparisons (pre- and post-intervention) were computed to make the comparisons based on the Y-BOCS scores of patients at pre- and post-intervention.

Results

Results of the t-test (Table 1 and Figure 1) revealed that OCD patients showed significantly lesser post-intervention scores on Y-BOCS, namely, obsessions domain ($t = 9.42$; $p < 0.00$), compulsions domain ($t = 8.80$; $p < 0.00$), and total score on Y-BOCS ($t = 9.97$; $p < 0.00$) as compared with their pre-intervention scores without any drop-outs. These findings revealed that OCD patients showed significant improvement after OCD the proposed therapy in combination with pharmacotherapy.

Discussion

In the present investigation, the results of the t-test revealed that OCD patients scored lesser post-intervention as compared to pre-intervention scores on the Y-BOCS rating scale. These findings revealed that the proposed therapy, in

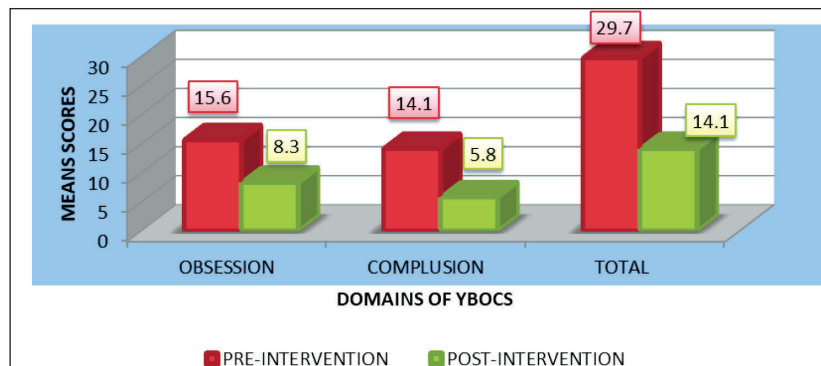


Figure 1. Differences Between Means of Pre- and Post-Intervention Scores of OCD Patients (N = 10) on Y-BOCS.

combination with regular pharmacotherapy, was well accepted by the clients, as evident by the lack of attrition, and was effective in reducing OCD symptoms among patients in ten sessions. The reason could be that the proposed therapy is based on an established CBT approach, which is itself the gold-standard therapy. The effectiveness of CBT is linked with ERP, which is anxiety-provoking and distressing, and for some patients, it is not suitable, which may lead to high attrition rates during the treatment of OCD. A similar study was conducted by Chasson,¹⁵ on the topic of exposure and response prevention (ERP), discussing that it is an effective intervention for OCD but is often accompanied by significant patient dropouts. This proposed therapy is a blend of neuropsychoeducation, intrinsic motivation, and extensive use of metaphoric content integrated with the basic framework of CBT. Furthermore, the reason could be that the proposed therapy excluded the direct ERP exercises and made patients self-sufficient to ignore their obsessions with intrinsic motivation. In ERP, the stress is mainly on getting exposed and preventing the response in the clinical settings under the direction of a therapist. Whereas the proposed therapy concentrated more on making the client confident enough to ignore the obsessions and restrict compulsive acts on their own. Similar to the constructs of habituation and extinction as explained by ERP in the process of treatment, the proposed therapy also used the same constructs but without clinical setting-based exposure methods. Rather, the clients were empowered by making them knowledgeable about the fundamental theories behind the process of obsessions and compulsions. Furthermore, neuropsychoeducation was delivered to the patients, which made them understand the biological basics of this disorder. At this point, patients could recognize that negative or unwanted thoughts were caused by an imbalance in neurotransmitters or hormones and not by any other factor and that these biological imbalances in the body could be treated with medication. It thus empowered them to tolerate the anxiety and ignore the obsessive thoughts, leading to response prevention. This sense of empowerment intrinsically motivated the clients toward self-directed behavioral changes, which included restricting compulsive

acts. Along with intrinsic motivation and neuropsychoeducation, the extensive use of metaphoric language helped patients accomplish difficult goals like learning in the least restrictive way possible, surpassing the opposition, and reaching the unaware. Leeuwerik et al. also reported that a strong emphasis on psychoeducation in ERP might lay the groundwork for subsequent success in performing challenging and anxiety-evoking exposures.¹⁶ Hence, in totality, the integration of these three components, namely, neuropsychoeducation, intrinsic motivation, and metaphoric language, served as a blend in the basic framework of CBT; in every session, they worked together and empowered the client to handle their obsessions and compulsions on their own without the need of excessive external support from the therapist, even during the therapy. To conclude, it can be said that the proposed therapy offers a fair substitute for ERP and shows promising results in overcoming the symptoms of this disorder.

Conclusion

In a nutshell, it can be concluded that neuropsychoeeducation equips the clients with an understanding of the basic mechanisms of OCD, which results in increased knowledge and hopes to recover and also reduces fear and myths regarding their suffering. Intrinsic motivation helps the clients regulate their obsessions and compulsions on their own. Metaphoric language leads to easy comprehension of complicated biological and psychological constructs and also makes the treatment procedure pleasant and interesting. The results showed that the proposed therapy is effective in reducing the symptoms of OCD without using many anxiety-provoking techniques. The proposed therapy is based on the principle “*Knowledge Is Confidence*,” implying that knowledge empowers the person to manage their own issues. Overall, when neuropsychoeeducation, intrinsic motivation, and metaphoric language are integrated with CBT, it empowers clients to understand and treat their disorder with their own efforts. Thus, it is suggested that the proposed therapy be named Client Empowerment Therapy (CET).

Limitations

The current study has a few but significant limitations. First, the sample size was small, and the sample population came from a small geographic area; thus, the results could not be generalized to the entire population of OCD patients. To compare the effectiveness of the proposed psychotherapy, a comparative study with another group of samples receiving gold-standard CBT with ERP therapy is required. Also, a follow-up evaluation should have been done after a few months to assess the sustainability of the effect.

Authors' Contribution

First author: Conception of the study, manuscript preparation, data collection, and analysis.

Second author: Supervision, data analysis, and editing.

Third author: Manuscript preparation and data collection.

Statement of Ethics

Ethical clearance for the study was obtained from the ethics committee of the NHS Hospital, Jalandhar, Punjab. Written informed consent was obtained from all the subjects.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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