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Research Article

Evaluation of Routine Outcomes of CBT Vs CBT & EMDR in a Community Mental Health Service for Severe and Enduring Mental Health Problems

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Abstract

Background and Purpose: Cognitive Behavioral Therapy (CBT) is the psychotherapy treatment of choice for most psychiatric disorders and is regularly used in Community Mental Health Team settings . Eye Movement Desensitization and Reprocessing therapy is often used with PTSD but there is little evidence base for it being used with other psychiatric disorders, or combined with CBT, and whether or not this would have an effect.

Method: A retrospective cohort design was adopted to compare outcomes at pre- and post-therapy on three outcome measures, the Beck Depression Inventory (BDI) [1], the Beck Anxiety Inventory (BAI) [2] and the Outcome Questionnaire 45 item version (OQ.45) [3], between clients who received CBT and those who received both CBT and EMDR.

Results: The results showed that both the CBT and CBT and EMDR conditions achieve statistically significant outcomes on all three outcome measures. The CBT and EMDR condition achieved superior outcomes on the BAI and OQ.45 post therapy. Both the CBT and EMDR and CBT conditions achieved similar statistically significant outcomes on the BDI.

Conclusions: EMDR and CBT combined appeared to achieve more positive outcomes on the BAI and OQ.45 in comparison to CBT alone in a similar timescale of an average of 10 sessions for a broad range of psychiatric disorders. These findings suggest that larger scale RCTs may be warranted on EMDR either alone or combined with CBT for a broad range of psychiatric disorders.

List of abbreviations

BAI	:	Beck Anxiety Inventory
BDI-II	:	Beck Depression Inventory-II
CBT	:	Cognitive Behavioral Therapy
EMDR	:	Eye Movement Desensitization and Reprocessing
ICD	:	International Classification of Diseases (WHO, 1992)
OQ-45	:	Outcome Questionnaire-45
PD	:	Personality Disorders
PTSD	:	Post-traumatic Stress Disorder

Introduction

Cognitive Behavioural Therapy (CBT) is currently the psychological therapy treatment of choice according to the National Institute of Clinical Excellence (NICE) for a broad range of psychiatric disorders, including depression, anxiety disorders, bipolar mood disorder and borderline personality disorder. In addition, CBT and Eye Movement Desensitization and Reprocessing Therapy (EMDR) is rated at equivalent effectiveness in the NICE guidelines and meta analyses for Post-Traumatic Stress Disorder [4,5]. There are few, small scale studies reporting EMDR's effectiveness at addressing other forms of psychiatric disorders such as depression in an adolescent population [6], depression in patients with

myocardial infarction [7], Borderline Personality Disorder [8], panic disorder [9] and generalized anxiety disorder [10] and PTSD in Psychosis [11]. However, none of these studies has explored EMDR combined with CBT in a routine clinical practice setting to see if it may or may not add to effective outcomes.

Within the National Health Service (NHS) in the UK, in order to be compliant with the NICE guidance [5,12,13], local psychology departments primarily use CBT to treat most mental health problems, where there is an evidence base to treat.

Within a community mental health team setting, for clients with severe and enduring mental health problems, CBT is predominantly used to treat a broad range of mental health problems. In some cases, both EMDR and CBT have been used successively to treat more complex presentations. The rationale for using EMDR in addition to CBT was that there is an evidence base for EMDR to treat trauma successfully within a few sessions and that trauma can underpin most mental health problems [14,15]. There appears to be a limited evidence base for EMDR addressing other disorder specific problems such as anxiety disorders or depression and limited research carried out combining both CBT and EMDR for different disorders. Furthermore, there is limited published practice based evidence research in routine clinical settings exploring if the combination of EMDR and CBT is more effective than CBT alone for different disorders and therefore, this was evaluated in the local Community Mental Health Team (CMHT), in order to assess if EMDR offered additional benefits on clients' routine outcome measures. This study sought to investigate if EMDR had an additional benefit for clients receiving CBT in a CMHT setting for a broad range of mental health problems in routine clinical practice.

Method

Design

This retrospective cohort study employed a mixed design, comprising one repeated measures variable with 2 time points (pre- and post-therapy), one between-groups independent variable of treatment group with 2 levels (CBT vs CBT+EMDR), and three dependent outcome variables (OQ-45, BDI-II and BAI).

Participants

As this study was conducted in an adult CMHT, all participants were working age adults between the ages of 18-65 who met the criteria of 'severe and enduring mental health problems', and presented to the CMHT between 2013 and 2016. All patients who attended psychological therapy and completed the pre-therapy and post-therapy questionnaires were eligible for inclusion in this retrospective study; no participant was excluded based on age, gender, ethnicity or diagnosis. Patients who had not completed at least one questionnaire both before and after therapy were not included. Participant demographics were recorded and are presented in the Results section.

Measures

Three standardized outcome questionnaires were given to all patients pre- and post-therapy as per the service standard.

Outcome Questionnaire-45 (OQ-45; Lambert, Hansen, Umphress, Lunnen, Okiishi, & Burlingame, 1996):

This 45-item self-report outcome measure is designed for repeated measurement of client progress while in therapy and following termination. It takes 3-5 minutes to complete. It measures Symptom Distress (symptoms of depression and anxiety), Interpersonal Relationships (loneliness, conflict with others and marriage and family difficulties), and Social Role (difficulties in workplace, school or home duties). These three subscales are combined to produce a score from 0-180, where a cut-off of 63 indicates symptoms of clinical significance, and a change of 14 points or more indicates 'reliable change'. This measure has been shown to have good reliability and validity [16].

Beck Depression Inventory II (BDI-II; Beck, Steer, & Brown, 1996):

This 21-item self-report questionnaire is the most widely used measure for detecting depression and takes 5 minutes to complete. It measures numerous aspects of depression including affectivecomponents (e.g. mood) and somatic components (e.g. physical) in line with the DSM–IV [17]. It has a score range of 0-63 with well-established categories of 'minimal', 'mild', 'moderate' and 'severe'. This measure has very good reliability and validity across multiple demographic groups [18].

Beck Anxiety Inventory (BAI; Beck & Steer, 1993):

This widely used 21-item self-report inventory is used to assess anxiety levels in adults and adolescents and takes only a few minutes to complete. The questionnaire focuses on the somatic (physical) symptoms of anxiety, but does include cognitive and affective elements. Like the BDI-II, it has a maximum score of 63 with well-established severity ranges. The BAI has well-established reliability and validity [19].

Procedure

All patients who attended psychological therapy sessions at this adult CMHT completed the 3 outcome questionnaires (OQ-45, BDI-II and BAI) at initial assessment and at their final therapy session, as per the service standards. Between completion of the questionnaires, participants received either CBT or a combination of CBT+EMDR (data regarding number of sessions is presented in the Results section). The scores from the outcome measures were calculated and recorded on an internal database, along with patient demographic data and information such as therapist, diagnosis and number of sessions attended. Relevant data from this database was collated and exported to a secondary anonymized database for analysis in this study.

Data Analysis

Data was analyzed using SPSS version 22.0 [20]. SPSS was used to analyze for differences in age, gender, number of sessions, and distribution of diagnoses between the two therapy groups. SPSS was used to conduct repeated measures t-tests to analyze for significant differences in outcomes pre- to post-therapy, and was used to perform the main mixed ANOVA (see Design section above).

Results

Participant Demographics

The final analysis took place on 63 participants, and demographic data can be seen in (Table 1). There were no significant differences between the treatment groups for age ($t(61) = .052$, $p = .959$), gender ($X^2(1) = 2.80$, $p = .094$) or number of sessions ($t(59) = .671$, $p = .505$). Number of sessions data was missing for 2 participants in the CBT group. The mean number of sessions of EMDR received in the CBT+EMDR group was 5.87 (SD = 3.3; range 2-16).

	CBT (N=32)	**CBT+EMDR** (N=31)	**TOTAL** (N=63)
Age			
Mean	39.5	39.65	39.57
SD	10.4	11.7	10.9
Range	22-62	20-60	20-62
Gender	15 females (47%)	21 females (68%)	36 females (57%)
No. of sessions			
Mean	9.93	10.8	10.38
SD	4.4	5.6	5
Range	3-18	5-27	3-27

Table 1: Participant Demographics.

Patients were classified by primary diagnosis according to the ICD-10 codes [21], with a separate category for PTSD as this is a variable of interest in the current study. 'Mood' covers ICD codes F30-F39, 'Anxieties' covers codes F40-F48, with the exception of PTSD (F43.1), 'PD' (personality disorders) covers F60-F69, and 'Psychoses' covers F20-F29. There was no significant difference between distribution of diagnostic categories for the two treatment groups ($X^2(4) = 7.27$, $p = .122$; (Figure 1), however when PD and Psychoses are removed from the analysis, there is a significant difference between treatment groups ($X^2(2) = 6.95$, $p = .031$, suggesting there may be more participants with PTSD in the CBT+EMDR group and more patients with mood disorders in the CBT only group. Whilst this is as expected, it will be important to bear this in mind when drawing conclusions.

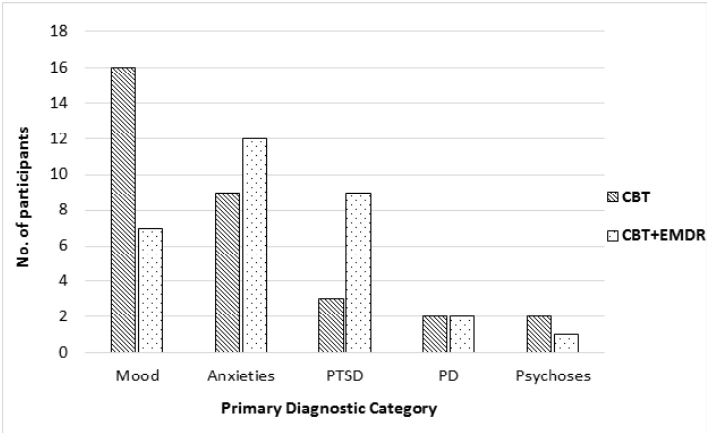

Figure 1: No. of participants in each diagnostic category for each treatment group.

Comparison of Outcomes Pre- to Post-Therapy

All patients had full BDI-II and BAI data (N=63); three participants were excluded from the OQ-45 analysis due to missing data (N=60). Paired samples t-tests with a main effect of time with 2 levels (pre-therapy and post-therapy) were conducted on the 3 dependent variables: the OQ-45, BDI-II and BAI. Significant differences were found on the OQ-45 ($t(59) = 9.06$, $p < .001$), the BDI-II ($t(62) = 9.49$, $p < .001$), and the BAI ($t(62) = 7.83$, $p < .001$), suggesting significant improvements were made pre- to post-therapy (Table 2).

	Pre-therapy (Mean (SD))	**Post-therapy** (Mean (SD))
OQ-45 (N=60)	94.13 (23.07)	66.20 (22.77)
BDI-II (N=63)	30.16 (11.25)	15.09 (11.95)
BAI (N=63)	25.71 (12.60)	14.56 (11.07)

Table 2: Improvements on scores on outcome measures (OQ-45, BDI-II, BAI) pre- to post-therapy.

Comparison of therapy groups (CBT vs CBT+EMDR)

Prior to performing the mixed ANOVA to examine whether there were significant interactions between the two therapy groups pre- to post-therapy, a series of independent samples t-tests were conducted to see if there were significant differences between the two groups prior to therapy commencing. No significant differences were found between the CBT and CBT+EMDR groups prior to therapy on the OQ-45 ($t(59) = 1.24$, $p = .222$), the BDI-II ($t(61) = .699$, $p = .487$), or the BAI ($t(61) = 1.75$, $p = .085$).

A mixed ANOVA with one repeated measures factor of time (with 2 levels: pre- and post-therapy) and one between-groups factor of therapy group (with 2 levels: CBT and CBT+EMDR) was performed on 3 dependent variables (OQ-45, BDI-II, BAI) to examine whether there were significant interactions between the two

therapy groups pre- to post-therapy, i.e. did one group improve significantly more than the other over the course of therapy?

The data met assumptions for equality of variance across all groups and conditions. A significant interaction was found for the OQ-45 ($F(1,58) = 7.10$, $p = .010$; see (Figure 2) suggesting that the CBT+EMDR group improved significantly more than the CBT group pre- to post-therapy. A marginally significant interaction was found for the BAI ($F(1,61) = 3.66$, $p = .060$; see (Figure 3) suggesting that the CBT+EMDR group made marginally significantly greater gains on the BAI over the course of therapy compared to the CBT group. There was no significant interaction found for the BDI-II ($F(1,61) = 1.24$, $p = .270$; see (Figure 4), suggesting both groups made equal gains pre- to post-therapy on the BDI-II.

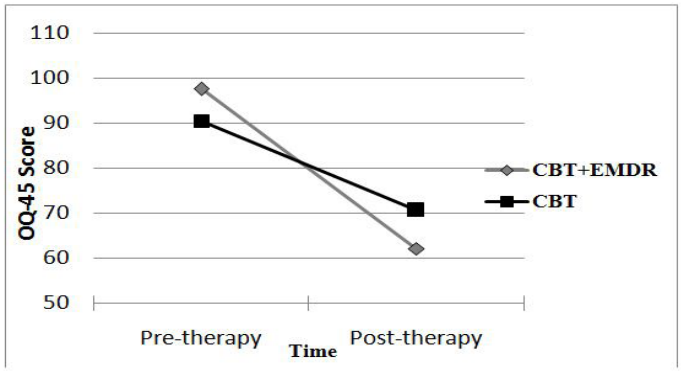

Figure 2: Significant interaction between therapy groups pre- to post-therapy on the OQ-45.

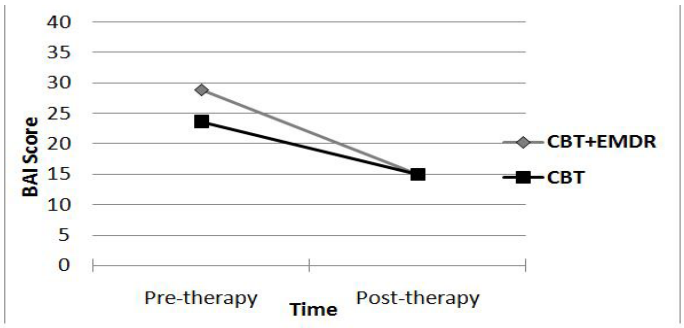

Figure 3: Marginally significant interaction between therapy groups pre- to post-therapy on the BAI.

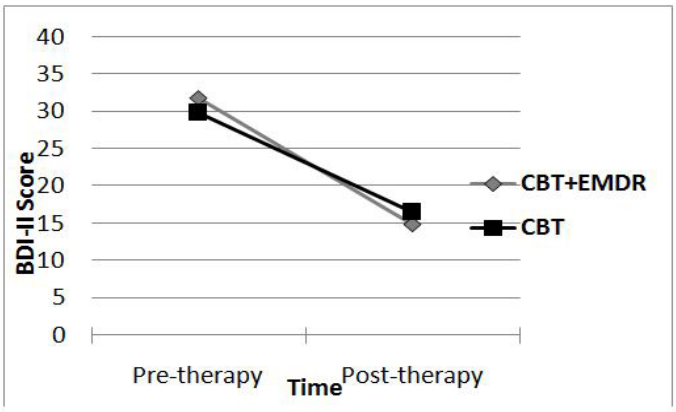

Figure 4: Interaction between therapy groups pre- to post-therapy on the BDI-II.

Following the mixed ANOVAs, independent samples t-test were conducted to analyze whether there were significant differences between the therapy groups at the end of therapy on any of the outcome measures. No significant differences were found between the groups post-therapy on the OQ-45, BDI-II or BAI. Thus, examining the OQ-45 results, although there was no significant difference between the groups pre-therapy or post-therapy, both groups improved significantly over the course of therapy with the CBT+EMDR group improving significantly more than the CBT group. With the BAI, this interaction is marginally significant, and it is non-significant for the BDI-II.

Discussion

EMDR and CBT proved to be more effective than CBT alone on the outcome results from the OQ.45 suggesting that EMDR may provide a more generalized positive impact on an individuals' functioning, which fits with previous research findings [14]. The results on the BDI showed no significant difference in outcome between the conditions. The results on the BAI did show some differences in outcome where there were gains in the CBT & EMDR group above the CBT stand- alone group which suggests that EMDR had an additional benefit at reducing anxiety in a broad range of different disorders. Therefore, it is possible that this may provide some evidence for the primary EMDR hypothesis that most, if not all psychiatric disorders, are related to unprocessed

traumatic memories and that if these are reprocessed then clients will experience an overall improvement in their functioning and reduction in not just PTSD symptoms but depression and anxiety symptoms as well [14]. Furthermore, the mean average number of sessions for CBT and EMDR combined was only one more than the CBT group which would suggest that more gains were made in a similar period of time with both therapies combined.

Findings Linked with Other Research

The findings from this study suggest that EMDR combined with CBT has a substantial positive effect on individuals' anxiety and general wellbeing over CBT alone. This finding may link to research suggesting that EMDR has a broader positive impact on individual functioning [10].

Limitations

There are many limitations within this study. Firstly, the lack of randomization between the two groups. Secondly the fact that the CBT group consisted of results from three different clinicians, including two experienced trainee Clinical Psychologists in comparison to the CBT & EMDR group results which were achieved by a senior experienced Clinical Psychologist & EMDR Europe Practitioner. Furthermore, whilst every step was taken to ensure that CBT and EMDR were delivered in line with standard protocols and the evidence base, there was no external evaluation of this.

There are further limitations in the study in terms of the small numbers in some of the diagnostic categories such as the personality disorder and psychoses groups which only had two participants in each which means that these results cannot be generalized. Furthermore, there is a limitation in the outcome measures where there was no specific measure for Post-Traumatic Stress Disorder (PTSD) which was due in part to the service having standardized measures for depression, general well- being and anxiety - PTSD is not routinely assessed or evaluated as part of the service standard. However, it could be argued that the findings from this study suggest that EMDR had significant positive effects on anxiety and general well- being, not just on PTSD which may suggest a more global positive impact than just trauma symptom reduction.

Suggestions for Further Research

Despite the limitations mentioned above, the results from this research suggest that EMDR can be effective with a broad range of different diagnoses in reducing symptoms of depression and anxiety, not just trauma or PTSD. Therefore, this may warrant further larger scale Randomized Controlled Trials on different disorders in order to see if CBT & EMDR or if EMDR alone can yield further positive results in these areas.

Conclusion

EMDR and CBT combined appeared to yield more positive outcomes on clients overall general wellbeing and anxiety in comparison to CBT alone with a broad range of problems. Further research is needed to see if EMDR can be effective with other diagnoses either with EMDR alone or EMDR combined with CBT in randomised controlled trials.

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