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META-ANALYSIS OF DIFFERENT PSYCHOLOGICAL TREATMENTS AND THEIR COMPARATIVE SUCCESS IN RECOVERY OF POSTTRAUMATIC STRESS DISORDER (PTSD)

Abstract

The goal of this meta-analytical study was to identify the effectiveness of different psychotherapies used in the treatment of posttraumatic stress disorder (PTSD). The study included 19 different studies. The sample used in the research contained a total of 1197 participants, victims of different types of trauma (motor vehicle accidents, violence, abuse, veterans). The sample was taken as heterogeneous; therefore, it was used the random effect model. Effect size was weighted with the sample size. Mata-analysis identified the most significant mean weighted effect size of the Eye Movement Desensitization and Reprocessing (EMDR) therapy ($d=5.5$, $p<0.05$), followed by Trauma Desensitization ($d=1.954$; $p<0.05$), CBT ($d=1.155$; $p<0.05$), Mindfulness Based Cognitive Behavioral Therapy ($d=0.759$; $p<0.05$) and Sertraline medical therapy ($d=0,434$, $p<0.05$). Result of meta-analysis discovered no significant difference in between the effectiveness of research incorporated treatments of PTSD and no specific treatment was identified as more successful comparing to others.

Key words: PTSD, treatment, effect size, meta-analysis.

Posttraumatic Stress Disorder (PTSD) represents the psychological syndrome identified in people who were exposed to different traumatic situations. Various events and circumstances can cause trauma, like war, physical or sexual assault, natural disasters and motor vehicle accidents.

Many theoretical approaches claim the benefit of the treatment of PTSD. Majority of the reported research from earlier years relied on uncontrolled studies, as well as controlled and uncontrolled effect sizes. Today, number of randomized studies use meta-analysis to identify the effect size of various psychological treatment in reduction of PTSD syndrome. Meta-analysis also compares success of different types of psychological treatments in recovery of PTSD symptoms (Sherman, 1998; Van Etten i Taylor, 1998).

In the past thirty years, numerous studies tried to identify the basic elements of psychotherapy for PTSD. Edna Foa and her colleagues compared the stress prevention training sessions, prolonged exposure and supportive psychotherapy in

45 women, victims of sexual assault who developed PTSD (Foa, 1991). They found exposure of the "imagined" trauma to correlate with sleep disorders and anxiety symptoms three months after the treatment. This and similar studies have influenced the development of many other studies exploring the subject. Today, as a result, there are thousands of studies examining the success of PTSD treatment.

It is difficult to prove there is only one technique that can help clients confront their traumatic memories and heal from them. Frank and his colleagues, for example, failed to demonstrate statistically significant difference between the cognitive therapy and the treatment of systematic desensitization in victims of sexual assault. Both techniques equally contributed to a significant reduction of symptoms of anxiety, depression, and fear (Frank et al., 1988). In another well-run study, researchers found that assertiveness training, stress prevention, and supportive psychotherapy, along with psychoeducation, led to a significant recovery from anxiety and depression (Resick et al., 1988). Therefore, the first comparative studies found that the recovery from trauma and PTSD occurs in application of most of the investigated treatments.

Studies included in this meta-analysis mostly were used in successful PTSD treatment in the recent years. Trauma Focused Cognitive Behavioral Therapy (TFCBT) represents an intervention recommended for people with acute stress disorder (ASD) or acute PTSD symptoms. This therapy is based on the Beck's theory that irrational thoughts clients have about themselves and other people lead to increased anxiety and depressive reactions. In the context of PTSD, people can develop exaggerated negative thoughts about threats, vulnerabilities or own worthlessness after trauma (Foa et.al., 1993). Contemporary cognitive theories of PTSD promote an understanding of the expectations and evaluation of the meaning of aversive experience (Foa and Kozak, 1986; Foa et al., 1989; Chemtob et al., 1988; Litz and Keane, 1989). These models suggest that PTSD symptoms arise from the structure of fear that is placed in long-term memory. A traumatic experience can be so intense that it creates fear conditioning with a variety of stimuli (sight, sound, smell and physical sensations). Such stimuli now become constant reminder of trauma (Foa et al., 1992). Therefore, all cognitive-behavioral therapies, from the standpoint of PTSD, are based on the desensitization of trauma, as well on avoidance reduction procedure (carried out through different types of exposure).

Eye Movement Desensitization and Reprocessing (EMDR) is a new treatment of PTSD, represented by the Francine Shapiro (Shapiro, 1989). Today, EMDR is used as one of the technique of choice for clients with simple PTSD. This type of therapy is new and controversial treatment, which includes exposure to the imagined traumatic image or a memory, followed by the client's eye movements. Shapiro argues that: "exposure to trauma produces neural changes and disruption of physiological balance, which leads to improper processing of traumatic memories" (Shapiro, 2001, pg.30). EMDR works to reverse the neural pathology and allows proper processing and integration of traumatic memories.

Recent years presented several well-controlled studies on the use of drugs in the treatment of PTSD. Therapy medicaments which are useful in the treatment of PTSD include: tricyclic antidepressants (TCA), and agents with anticonvulsant

impacts and mood-stabilizing (e.g., Carbamazepine), benzo-diazepam (BDZS), inhibitors of the oxidase of monoamines (MAOIs) and selective serotonin reuptake inhibitors (SSRIs). Therapy medications assume that trauma affects neurochemical abnormalities in the mechanisms of control of excitement and other aspects of emotional processing, as well as drugs that affect these aberrations. Changes in the various chemical systems and neurotransmitters affect PTSD (van der Kolk, 1987; Friedman, 1991; Sutherland and Davidson, 1994).

Mindfulness is a technique of focusing attention on the moment and therefore creating the possibility of an open acceptance of this experience (Baer et al., 2006; Kabat-Zinn et al., 2003). It is believed that mindfulness plays important role in the experience of trauma, given that most people, who already have developed psychological symptoms after trauma, tend to avoid reminders of trauma, including their own thoughts and emotions (Follette, et al., 2006). This technique can be successfully used to make an individual able to focus their own attention to these experiences, to accept them in a non-judgmental and compassionate way. This helps with reduction of PTSD symptoms (Vujanovic et al., 2009; Walser & Westrup, 2007).

Despite all these treatments, none is considered as a treatment of choice, and to date, there are various attempts to quantify the effectiveness of these interventions. The purpose of this research is to make a comparative analysis of the effectiveness of PTSD treatment using meta-analysis.

Method

To identify randomized (controlled) studies of psychological treatments for PTSD, the systematic bibliographic research was taken from different databases. Additional research is done in the previous systematic reviews and meta-analysis of psychological treatments. The research was limited to those published in English.

To maximize access to all relevant studies, several steps were used in the process. First, the literature search was performed via Canadian Simon Fraser University (SFU) library database, as well as through search engines like Google, Willey Science Direct and Sage Journals. Several combinations of key words were used in the English language without any restrictions. The words used were “PTSD”, “Treatment” and “Research”. SFU database offered over 60,000 texts, with several thousand doctoral dissertations. Finally, all relevant previous meta-analysis were included, as well as reviews not covered in the previous two steps.

Following criteria were used for the selection of studies: 1) study is required to test specific psychotherapeutic treatment of PTSD in comparison with the control group, alternative treatments or in combination of two or more treatments; 2) study had to use a valid instrument for the measurement of PTSD symptoms (they could be self-describing, or obtained in the interview); 3) ideally, the study was experimental, including clients in the randomized experiment compared with the group exposed to the treatment and/or control group. The decision of the author was to exclude studies that had less than 10 participants, questioning their ability to detect the right

size effect. 5) study must be published in English; 6) only study using adult subjects is taken into consideration; 7) there is no restriction on the type of trauma; 8) paper that has been published in journals with impact factor less than 1was not accepted, as well as research with not enough information about the study. The search and selection of studies was done by the author.

Post-traumatic stress disorder methodologically is operationalized through the following instruments:

- *The Clinician-Administered PTSD Scale* (CAPS) (Blake et al., 1995; Blake et al., 1990; Weathers et al., 1992) represents a clinically structured and standardized interview that questions 17 PTSD symptoms, and determines the frequency and symptom intensity organized in the following three groups: reliving, avoidance, and arousal.
- *PTSD symptom Scale - Self Report* (PSS-SR) (Foa et al., 1993; Rothbaum et al., 1990) is a self-describing scale with 17 items in correspondence to the 17 DSM-IV PTSD symptoms. The presence and intensity of PTSD items is represented on a scale of 0 (not present) to 3 (very present), with sub-scores for reliving, avoidance and arousal.
- *The Impact of Event Scale* (IES) (Horowitz et al., 2002) consists of 15 items that measure intrusive and avoidance symptoms. Frequency and intensity of each item is represented on the scale from 0 (not at all) to 4 (extremely).
- *Post-traumatic Diagnostic Scale* (PDS) (Foa et al., 1997; APA, 2000) is a self-describing instrument that identifies PTSD symptoms specified by the DSM-IV and ranked on the five-point scale from 0 (never) to 5 (as a rule).
- *The Structured Interview for PTSD* (SI-PTSD) (Davidson et al., 1989) - each of the 17 items is scored with DSM-III-R criteria for severity of PTSD symptoms on this scale.
- *PTSD Checklist* (PCL) (Blanchard et al., 1996) is a self-descriptive standardized instrument that is used to identify intensity and frequency of PTSD symptoms on the six-level scale.

Most of the studies included sample of adults between 18-99 years of age. This meta-analysis included adult subjects only, and excluded all the studies carried out with younger population. Sample included the total of 1197 people, representing both genders.

Meta-analysis used quantitative studies only, and did not accept the ones based on the correlation coefficient, squared coefficients of multiple regression or other squared coefficients that lose information of the direction of connections (Fajgelj, 2010). Correlation coefficients were not used, because, in addition to information on the relationship between variables, it may contain information on the impact of third variables on this link, which is not of the interest of this study.

In the process of searching for the literature and due to meta-analytical criteria, only 19 studies were retained. Table 1. (see Appendix, Table 1.) presents studies that met all the criteria and were included in the meta-analysis.

As a measure of the effect size all studies used the difference in arithmetic means, standard deviation and sample size. Study results measured the size of post effect compared with the control group or with the other treatment. Table 2. (see Appendix, Table 2.) presents the effect size obtained in the accepted studies.

Considering the total study sample came from different countries, and participants were mainly recruited from clinical population (veterans, women, traffic accidents), it was assumed that the effect size was heterogeneous, as well that every separate study did not come from populations having the same or similar effect comparing to other populations (Fajgelj, 2010). For these reason, it was used the random effects model, with tendency to make generalization to the general population.

Results

Since the studies included in the meta-analysis carried out samples of various sizes, mostly smaller ones, it was decided to do the weighting of the effect sizes with the number of participants. These weighted effect sizes are presented in Table 3. (see Appendix, Table 3.). Furthering the method and using the computation formula for Q and I, where Q is distributed as a chi-square statistic and I^2 statistic described as the percentage of variation across studies that is due to heterogeneity rather than chance, it was concluded I was significantly higher, indicating heterogeneity, and it will be further used to explain the variation in the results (DerSimonian & Laird, 1986). This confirms the premise of the author to use a random model. For obtained meta-statistics from the Table 3., the evaluation formula used was proposed by Der Simonian and Laird. The converted overall effect is small, according to Cohen's criteria (Cohen, 1992). In the Table 4. (see Appendix, Table 4.) are presented the confidence intervals, reviewing the final results of a meta-analysis that will be discussed further.

Table 4. presents the converted effect sizes, standard errors, confidence intervals, and p values obtained for each individual study. Presented p values refer to set zero hypothesis that there is no significant difference in efficiency between comparable psychological treatments, control groups or therapies alone, and that the effects of comparable therapies in the population are the same. The table shows statistically significant effect size of Desensitization Therapy in relation to Eye-Movement Desensitization and Reprocessing therapy (EMDR) ($d = 1.954$; $p < 0.05$). Also, in discrimination of Cognitive-Behavioral Therapy (CBT) and Desensitization Therapy, significant effect size was found in benefit of CBT ($d = 1.155$; $p < 0.05$). Significant effect size was also established in the treatment of Mindfulness-Based Stress Reduction therapy, as post-effect ($d = 0.759$; $p < 0.05$). Similar results were also found in the study of Cognitive Therapy based on Mindfulness and control groups ($d = 0.536$; $p < 0.05$). Sertraline therapy compared to placebo-treated group determined the significant effect size ($d = 0.434$, $p < 0.05$). EMDR therapy as a post-effect, presented significant effect size ($d = 5.5$, $p < 0.001$). Group Cognitive Therapy

compared to the control group showed a statistically significant effect (d = -0.869, p <0.05).

In comparing results from the above research and after quantitative meta-analysis, it was found that, based on combined results, the effect size was low and for 95% confidence interval (-0.223-0.556), p = 0.403. This indicates there is a small difference between treatments comparing to their individual efficiency over PTSD. Looking at the confidence interval, we can conclude that this research is not sufficient to explain the effect size of different treatments, and that additional information or research is necessary to draw further conclusions. It should also be noted that the studies listed in this meta-analysis were of a clinical type and as such, had very small samples, which also affected the width of the confidence level.

Discussion

Meta-analysis included 19 studies and four different psychological treatments of posttraumatic stress disorder. A total of five studies examined comparison of CBT treatments and control group exposed to regular treatment; four studies compared the benefits of medicament therapy with control group; three compared EMDR therapy with Cognitive Behavioral Therapy; four studies researched success of Mindfulness therapy and one EMDR study researched its effect on the same group of patients.

Meta-statistic that examined the best treatment of post-traumatic stress disorder (PTSD) is 0.167, and represents a weighted average difference in the efficacy of remedying the symptoms of PTSD among all presented studies. It is with 95% certainty that it can be expected that PTSD treatments can be found in the interval of from 0.556 -0.022. This confidence interval indicates that zero hypothesis cannot be dismissed, thus confirming that there is no significant difference between treatments. The meta-analysis included small number of studies, and we lacked sufficient research to compare different treatments for PTSD. However, the obtained data indicate a relatively small difference among success of the treatments. The effect of 0.167 (SD = 0.199) in all studies, indicates that there is no difference in each individual treatment of PTSD, which confirmed the null hypothesis. These results do not deny the effectiveness of the treatment, such as EMDR, Mindfulness or Cognitive Behavioral Therapy. On the contrary, the calculated weights of the effects of these therapies indicate their successes in the repair of PTSD symptoms.

Analysis of studies with significant effect size used in this research also identified that the effectiveness of the mindfulness treatments was mostly tested in veteran populations, de-sensitization therapy has proved to be successful with victims of sexual violence, while group-based cognitive-based therapy showed great results with MVA victims. This raises the question whether each individual therapy that is successful in trauma recovery, can affect recovery in relation to specific type of trauma. This question may also be an invitation to new research to examine this connection. Considering these studies presented empirical success in the treatment of psychological trauma, the results obtained in this meta-analysis suggest that trauma victims certainly have many options when choosing a valid PTSD treatment.

Study of general meta-statistics in various studies that deal with the treatment of post-traumatic stress disorder makes sense, even with the small effect size in between treatments. In this study, we managed to determine the individual effect of each of the presented therapies. Thus, a Mindfulness-Based Stress reduction pointed to the success of treating the PTSD symptoms. This study showed a minimum dropout of participants (0%), and effect size obtained on this sample is more reliable. EMDR study as a post-effect showed significant effect size in PTSD treatment, however, the number of subjects included in the study, although without a dropout (0%), was very small (n = 10). Comparison of treatments such as Mindfulness – Based Cognitive Therapy and Desensitization Therapy compared with the control group, each individually showed a high magnitude of the effect size, but nevertheless compared to others, these treatments did not emphasize this efficacy. From all the above, calculating the average size of the effect of all treatments is logical, because it points to information not only about post-treatment therapy that is more successful or not, but also about the general success of individual therapies, as well as the small differences between them due to the way the individual research was led. Future meta-analyses of PTSD treatment should take into consideration the comparison of the success of different therapies and the existing influence of other variables, in addition to the type of treatment, on the success of the treatment of posttraumatic stress disorder.

Conslusion

Large number of individual research tried to identify the success of individual treatments in reduction of post-traumatic stress disorder symptoms, including meta-analyses that have explored the effect sizes of various PTSD therapies over the years. This review offered information on the success of individual treatment compared with the control group, other treatments or the same group in measuring post-effect (TD, CBT, EMDR, and Mindfulness). The research showed that the difference in the performance of individual psychological treatments is small. Common therapies of post-traumatic stress disorder, such as Cognitive Behavioral Therapy, Mindfulness and EMDR, have shown great effect and effectiveness in the repair of PTSD symptoms.

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Score translations were done in *Comprehensive Meta-Analysis* and Psychometrica software: http://www.psychometrica.de/effect_size.html#cohc, obtained on January 1. 2016.

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META-ANALIZA RAZLIČITIH PSIHOLOŠKIH TRETMANA I POREĐENJE NJIHOVE USPEŠNOSTI U LEČENJU POSTTRAUMATSKOG STRESNOG SINDROMA

Abstrakt

Cilj ove metaanalize bio je da utvrdi efikasnost različitih psihoterapija koje se koriste u tretmanu post-traumatskog stresnog poremećaja i poređenjem identifikuje onu koja je najefikasnija. Istraživanje je uključilo 19 različitih studija. Uzorak se sastojao od 1197 ispitanika, žrtava različitih vrsta trauma, kao što su saobraćajne nesreće, nasilje, zlostavljanje, kao i učesnika rata. Uzorak je tretiran kao heterogeni, te je stoga korišćen model slučajnih efekata. Veličina efekta bila je ponderisana veličinom uzorka. Metaanalizom je utvrđena najznačajnija veličina efekta kod terapije EMDR, kao post-efekta, (d=5,5, p<0,05), zatim desenzitacije na traumu (d=1.954; p<0.05), kognitivno bihejvioralne terapije CBT (d=1,155; p<0,05 i kognitivne terapije bazirane ne majndfulnesu (d=0,759; p<0,05). U istaživanju uticaja Sentraline terapije lekovima na sanaciju simptoma PTSP-a, sa „placebo" grupom, utvrđena je veličina efekta (d=0,434, p<0,05). Kao krajnji rezultat metaanalize dobijeno je da nema značajnih razlika u efikasnosti tretmana PTSP-a koji su obuhvaćeni ovim istaživanjem.

Ključne reči: PTSP, tretman, veličina efekta, meta-analiza.

Appendix

- Table 1.
- Table 2.
- Table 3.
- Table 4.
- Table 5.

Table 1. Accepted studies

#	Authors	Treatment	Source	Impact factor	Trauma type	n	Depended variable	Statistics
1.	Beck et al. (2010)	GCBT, CG	Behavior Therapy	1.865	MVA	33	CAPS	Arithmetic mean difference
2.	Brom et al. (1989)	TD, CG	Journal of Consulting and Clinical Psychology	2.986	Violence, MVA, SN, illness	54	IES	Arithmetic mean difference
3.	Davis et al. (2008)	Divalproex, PBO	Journal of Clinical Psychopharmacology	1.000	Veterans	82	CAPS	Arithmetic mean difference
4.	Ehlers et al. (2005)	CT, CG	Behavior Research and Therapy	2.208	MVA, NSA, death witnesses	34	PDS	Arithmetic mean difference
5.	Foa et al. (2006)	BCBT, CG	Journal of Traumatic Stress	1.154	SA, NSA	42	PSS-SR	Arithmetic mean difference
6.	Germain et al. (2012)	PRZ, PBO	Journal of Psychosomatic Research	1.097	Veterans	24	PCL	Arithmetic mean difference
7.	Högberg et al. (2008)	EMDR	Psychiatry Research	1.106	No specific type of trauma	20	IES	Arithmetic mean difference
8.	Jonathan et al. (2001)	Sertraline, PBO	Jama Psychiatry	6.463	PA, SA, Accidents, Violence and death witnesses	202	CAPS	Arithmetic mean difference
9.	King et al. (2013)	MBCT, CG	Depression and Anxiety	2.168	Veterans	37	CAPS	Arithmetic mean difference
10.	Krakow et al. (2000)	TD, CG	Journal of Traumatic Stress	1.154	CSA	50	PSS	Arithmetic mean difference
11.	Owens et al. (2012)	MBT	Psychological Trauma: Theory, Research, Practice,	1.072	Veterans, SA	140	CAPS, PCL-S	F
12.	Polusny et al. (2015)	MBSR	Jama Psychiatry	6.463	Veterans	116	PCL-S	Arithmetic mean difference
13.	Possemato et al. (2015)	PCBMT, CG	Journal of Clinical Psychology	1.742	Veterans	62	CAPS; PCL-S,	Arithmetic mean difference
14.	Raskind et al. (2007)	PRZ, PBO	Biological Psychiatry	4.775	Veterans	27	CAPS	Arithmetic mean difference
15.	Rothbaum et al. (2005)	TD, EMDR	Journal of Traumatic Stress	1.154	SA	114	CAPS, IES	f
16.	Tarrier & Sommerfield (2004)	CBT, TD	Behavior Therapy	1.865	Violence, MVA, death witness	31	CAPS, IES	Arithmetic mean difference
17.	Taylor et al. (2007)	TD, EMDR	Journal of Consulting and Clinical Psychology	2.986	SA, PA, MVA, death witness	54	CAPS	f
18.	van der Kolk et al. (2007)	EMDR, Fluox.	Journal of Clinical Psychiatry	1.850	CSA, SA, Violence, Loss, War, Accidents	50	CAPS,	Arithmetic mean difference
19.	Vaughan et al. (1994)	EMD, TD	Journal of Behavior Therapy and Experimental Psych	1.351	MVA, SA, CA, Assault	25	SI-PTSD	Arithmetic mean difference

GCBT – Group cognitive behavioral therapy; EMDR, EMD – eye movement desensitization adn reporocessing; CT- cognitive therapy; B-CBT – brief cognitive behavioral therapy; TD – desensitization therapy; CG – control group; MBCT, PCBMT – Mindfulness based cognitive therapy; PSZ- Prazosin; PBO- Placebo; Fluox-Fluoxetine; SA – Sexual assault; CSA- Childhood sexual abuse; PA – Physical assault; MVA – Motor vehicle accident; CAPS – Clinician-Administered PTSD Scale; IES – Impact on Events Scale; PDS – Posttraumatic Diagnostic Scale; PSS - PTSD Symptoms Scale; PSS - SR - PTSD Symptoms Scale – Self reported version; PCL – PTSD Checklist; PCL – S – Sexual Trauma Assessment; SI – PTSD – Structured Interview for PTSD.

Table 2. Treatment connection and PTSD recovery

#	**Treatment**	n1	n2	N	Size effect	Size effect convert.	Stand. deviation	VAR
1.	GCBT, CG	17	16	33	-20.50	-0.869	0.364	0.133
2.	TD, CG	31	23	54	-10.20	-0.422	0.278	0.077
3.	Divalproex, PBO	41	41	82	-0.700	-0.028	0.221	0.049
4.	CT, CG	14	20	34	-2.50	-0.323	0.351	0.123
5.	BCBT, CG	22	20	42	0.98	0.082	0.309	0.096
6.	PRZ, PBO	12	12	24	-1.70	-0.168	0.409	0.167
7.	EMDR	10	10	20	11.00	5.500	0.898	0.806
8.	Sertraline, PBO	98	104	202	-12.30	-0.434	0.142	0.020
9.	MBCT, CG	20	17	37	-15.80	-0.790	0.342	0.117
10.	TD, CG	43	7	50	-8.540	-0.754	0.414	0.172
11.	MBT	70	70	140	10.89	0.536	0.177	0.031
12.	MBSR	58	58	116	6.4	0.759	0.192	0.037
13.	PCBMT, CG	36	26	62	-1.00	-0.050	0.257	0.066
14.	PRZ, PBO	14	13	27	-8.00	-0.205	0.386	0.149
15.	TD, EMDR	57	57	114	28.00	1.954	0.228	0.052
16.	CBT, TD	14	17	31	21.9	1.155	0.390	0.152
17.	TD, EMDR	27	27	54	2.73	0.490	0.276	0.076
18.	EMDR, Fluox.	24	26	50	-10.32	-0.516	0.288	0.083
19.	EMD, TD	12	13	25	-5.00	-0.439	0.405	0.164
Total	-	-	-	1197	-	0.617	0.199	0.040

Table 3. Weighted size effects and values of meta-statistics

#	Wfe	W re	T*Wre (Pond)	T**2*Wre	Wre**2	Wre**3	Tau^within	Tau^Between	Q	Qdf	I**2	Summary Point	Summary Var
1	7.53	1.30	-1.128	0.979	1.685	2.188	0.638	0.000	32.993	18.00	45.443	0.167	0.040
2	12.92	1.40	-0.590	0.249	1.957	2.737	0.638	0.000	32.993	18.00	45.443	0.167	0.040
3	20.50	1.46	-0.040	0.001	2.123	3.093	0.638	0.000	32.993	18.00	45.443	0.167	0.040
4	8.13	1.32	-0.425	0.137	1.729	2.274	0.638	0.000	32.993	18.00	45.443	0.167	0.040
5	10.47	1.36	0.111	0.009	1.861	2.539	0.638	0.000	32.993	18.00	45.443	0.167	0.040
6	5.98	1.24	-0.209	0.035	1.544	1.918	0.638	0.000	32.993	18.00	45.443	0.167	0.040
7	1.24	0.69	3.809	20.952	0.480	0.332	0.638	0.000	32.993	18.00	45.443	0.167	0.040
8	49.30	1.52	-0.659	0.286	2.311	3.513	0.638	0.000	32.993	18.00	45.443	0.167	0.040
9	8.53	1.33	-1.047	0.828	1.755	2.325	0.638	0.000	32.993	18.00	45.443	0.167	0.040
10	5.82	1.24	-0.931	0.702	1.527	1.886	0.638	0.000	32.993	18.00	45.443	0.167	0.040
11	31.95	1.50	0.802	0.430	2.236	3.342	0.638	0.000	32.993	18.00	45.443	0.167	0.040
12	27.05	1.48	1.126	0.855	2.198	3.259	0.638	0.000	32.993	18.00	45.443	0.167	0.040
13	15.09	1.42	-0.071	0.004	2.019	2.869	0.638	0.000	32.993	18.00	45.443	0.167	0.040
14	6.71	1.27	-0.260	0.053	1.616	2.054	0.638	0.000	32.993	18.00	45.443	0.167	0.040
15	19.29	1.45	2.834	5.538	2.104	3.053	0.638	0.000	32.993	18.00	45.443	0.167	0.040
16	6.59	1.27	1.463	1.690	1.605	2.034	0.638	0.000	32.993	18.00	45.443	0.167	0.040
17	13.11	1.40	0.686	0.336	1.963	2.749	0.638	0.000	32.993	18.00	45.443	0.167	0.040
18	12.08	1.39	-0.716	0.370	1.927	2.676	0.638	0.000	32.993	18.00	45.443	0.167	0.040
19	6.09	1.25	-0.547	0.240	1.556	1.941	0.638	0.000	32.993	18.00	45.443	0.167	0.040
Total	268.38	25.27	4.208	33.694	34.195	46.783	12.113	0.000	32.993	18.00	45.443	0.167	0.040

*Wfe-fixed weighted effect; Wre-random weighted effect; T- Effet Sizes; sumVAR – total variance; Group T**2 var- true variance; Q- Cochran's Q; I**2 - percentage of variation across studies; Qdf –degrees of freedom; Tau between -variability between-study; Tau within - within-study variance; Summary Point – Total Effect Size.*

Table 4. Effect size variance and confidence interval

Treatment	Converted effect size	Stand. deviation	Var	CI L	CI H	Z-value	p-value
GCBT, CG	-0.869	0.364	0.133	-1.583	-0.154	-2.384	0.017*
TD, CG	-0.422	0.278	0.077	-0.967	0.123	-1.516	0.129
Divalproex, PBO	-0.028	0.221	0.049	-0.460	0.405	-0.125	0.901
CT, CG	-0.323	0.351	0.123	-1.010	0.394	-0.921	0.357
BCBT, CG	0.082	0.309	0.096	-0.524	0.687	0.264	0.792
PRZ, PBO	-0.168	0.409	0.167	-0.970	0.633	-0.411	0.681
EMDR	5.500	0.898	0.806	3.740	7.260	6.125	0.000**
Sertraline, PBO	-0.434	0.142	0.020	-0.713	-0.154	-3.044	0.002**
MBCT, CG	-0.790	0.342	0.117	-1.462	-0.119	-2.308	0.021*
TD, CG	-0.754	0.414	0.172	-1.566	0.059	-1.818	0.069
MBT	0.536	0.177	0.031	0.190	0.883	3.032	0.002**
MBSR	0.759	0.192	0.037	0.383	1.136	3.950	0.000**
PCBMT, CG	-0.050	0.257	0.066	-0.555	0.454	-0.195	0.864
PRZ, PBO	-0.205	0.386	0.149	-0.961	0.552	-0.530	0.596
TD, EMDR	1.954	0.228	0.052	1.508	2.400	8.582	0.000**
CBT, TD	1.155	0.390	0.152	0.391	1.918	2.965	0.003*
TD, EMDR	0.490	0.276	0.076	-0.051	1.031	1.774	0.076

EMDR, Fluox.	-0.516	0.288	0.083	-1.080	0.048	-1.794	0.073
EMD, TD	-0.439	0.405	0.164	-1.233	0.355	-1.083	0.276
Random	0.167	0.199	0.040	-0.223	0.556	0.837	0.403

***p<0.001; *p<0.05 CIL-lower limit of the confidence interval; CIH-upper limit of confidence interval.*

Table 5. Final results of Meta-analysis

Effect size i 95% confidence interval							Rejecting H0 Heterogeneity					
# of studies	Point estimate	VAR	SE	VARGU	CIG	CID	Z	p	Q	Df	I**2	P between studies
19	0.167	0.038	0.199	0.040	0.556	-0.223	0.837	0,403	174.397	18	89.679	0.000

Estimate – Total effect size; VAR-total variance; VARGU-variance with sample error; VARP-true variance; CIH –upper limit of the confidence interval; CIL- lower limit of the confidence interval; Q – Cohen's Q; Df – degrees of freedom.