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Effectiveness of Cognitive Therapy in Treatment of Borderline Personality Disorders

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ABSTRACT

Background: treatment of borderline personality disorders include in addition to medications several evidence-based psychotherapy treatment models, including schema focused therapy, dialectical behavior therapy, transference focused psychotherapy and cognitive behavioral therapy.

Objective: this study aimed to evaluate all randomized controls trials of pharmacological interventions in comparison with psycho educational group interventions in the treatment of borderline personality disorders.

Methods and Materials: this was an electronic search and it was conducted by using search strategy of cognitive psychotherapy and borderline personality disorder in MEDLINE, EMBASE and PsycINFO databases. Trials included in this review were clinical trials with cognitive interventions for subjects meeting DSM or ICD criteria for personality disorder.

Results: the search of the literature, after exclusion of irrelevant, duplicated and review studies, revealed 24 randomized controls trials that met the inclusion criteria. Included studies aimed to assess the effectiveness of a cognitive behavior therapy in treatment of border line personality disorders.

Conclusions: we concluded that the use of cognitive therapy is important in treatment of borderline personality disorder in addition to pharmacological treatment and treatment as usual. Doctors must choose the most effective type of cognitive therapy according to their patients' diagnosis, duration of the treatment and the available resources.

Keywords: personality, disorders, cognitive, interventions, effectiveness

INTRODUCTION

Borderline personality disorder (BPD) is a mental health disorder manifest by a universal pattern of instability in interpersonal relationships, self-image, affect, behavior, extreme emotions and impulsiveness [(1)]. BPD is characterized by numerous dangerous behaviors, a feeling of barrenness, self-harm, and a great fear of rejection. The behavior usually begins in early adulthood, and occurs across a variety of situations. Substance abuse, depression, and eating disorders are commonly associated with BPD. BPD increases the risk of self-harm and 10% of those people attempt suicide [(2)].

Psychotherapy has been actively followed and included in many researches. Treatment of BPD included in addition to medications several evidence based psychotherapy treatment models, including schema focused therapy, dialectical behavior therapy [(3, 4)], transference focused psychotherapy and cognitive behavioral therapy [(5, 6)].

The effectiveness of cognitive behavioral therapy (CBT) in treatment of borderline personality disorder (BPD) has been studied in many randomized controlled trials. From the time when a landmark controlled trial [(3)], dialectical behavior therapy (DBT) was found to be useful in treating many symptoms of the BPD [(7)].

Moreover, **Linehan *et al.*** has developed a cognitive behavioral intervention, dialectical behavior therapy (DBT) [(8)], for borderline personality disorder. The dialectical behavior therapy is an effective treatment that have its own target and categorized order of importance. DBT emphases on decreasing life threatening and suicidal performances, including para suicide incidents [(9)], actions that associated with treatment, mainly noncompliance and premature dropout, factors that strongly affect the quality of life, including those which demand inpatient psychiatric care and increasing general coping skills [(10)].

This study aimed to evaluate all randomized controls trials of pharmacological interventions in comparison with psycho educational group intervention for participants meeting DSM or ICD criteria for personality disorder to assess the effectiveness of a cognitive behavior therapy.

METHODS

An Electronic search was conducted using search strategy of (Cognitive psychotherapy) And

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(borderline personality disorder) in MEDLINE, EMBASE and PsycINFO databases. Trials included in this review were clinical trials with cognitive interventions for subjects meeting DSM or ICD criteria for personality disorder. **The study was done after approval of ethical board of King Khalid university**.

Outcomes were grouped using a similar symptomological categorization to that suggested by Soloff in 1998. The search resulted in 89 articles, of which 61 articles were irrelevant, 3 had inconsistent measures of outcomes, and 1 was duplicated. Finally, 24 clinical trials were included in this review.

Results: The search of the literature, after exclusion of irrelevant, duplicated and review studies, revealed 24 randomized controls trials (RCT) that met the inclusion criteria. Included studies aimed to assess the effectiveness of a cognitive behavior therapy in treatment of border line personality disorders (**Table 1).**

The review included 1853 patients. Nine of the studies were in women only, 6 of them included both sexes with women predominant and the last 9 studies did not report the gender of participants. The participants meet the DSM IV diagnostic criteria in 23 study and DSM III in one study.

Regarding the type of personality disorders, 10 studies included patients with suicide attempts and self-harm, 4 studies included patients with para suicidal and harming behaviors, one study included patients with substance use disorder, other 2 studies examined the post-traumatic stress disorder patients (PTSD), one study included patients with bulimia nervosa (BN) and other one study included patients with major depression. A study examined the effectiveness of dialectical behavior therapy in many types of personality disorders (Self-harm, commonly substance use disorders, depressive disorders, bipolar affective disorder, post-traumatic stress disorder, other anxiety disorders, and schizophrenia). Another study included in their study many types of BPD (paranoid PD, narcissistic PD and co-morbid disorders, major depression, agoraphobia dysthymia, bulimia anorexia, panic disorder, alcohol abuse, somatoform disorder schizoaffective disorder). One study included patients who were admitted in psychiatric hospitals or accident and emergency room contact or suicidal acts. The rest of two studies did not reported the type of the border line personality disorder.

The duration of the trial and follow up vary between the studies, as 7 of them conducted their studies in one year, 3 studies was conducted in 2 years, 4 of them done in 6 months duration, three studies done in 16 months, 17 months and 18 months, respectively. One study was conducted in 2 years and 4 months and other was conducted during period of 3 year. Two studies done in 10 months, and 11 months, respectively. Two studies didn't report the duration of their studies.

Regarding type of cognitive therapy, dialectical behavior therapy (DBT) was used in 7 studies, conative behavior therapy (CBT) was used in other 8 studies, schema focused therapy (SFT) was used in 2 studies, other 2 studies used manual assessment cognitive therapy (MACP), two studies used combined cognitive therapy and treatment as usual (CT + TAU), other study used system training for emotional predictability and problem solving (STEPPS), other one study used motive oriented therapeutic relationship (MOTR). Only one study didn't report the type of cognitive therapy.

Regarding the effectiveness of cognitive therapy, it's found that; the use of dialectical behavior therapy (DBT) in treatment of border line personality disorder (BPD) has special effects on improving the manifestation of anger and observed avoidance when compared with community treatment by experts (CTBE), which also showed marked decreased in observed avoidance and anger. DBT reduce suicidal attempts and depression and the increase anger control over time, beneficial in treatment of post-traumatic stress disorder (PTSD). DPT has significantly larger decrease in drug abuse when compared with treatment as usual (TAU), as it has been shown to be less effective than DBT in treating drug abuse. In other study, DBT was found to be more beneficial in improving interpersonal functioning in strictly dysfunctional patients with borderline personality disorder when compared with TAU and found to be both clinically and cost effective. One study found no significant differences between DPT and general psychiatric management.

The use of schema focused therapy showed significant drops in BPD symptoms and universal severity of psychiatric symptoms when it was compared with TAU, which only showed little improvement.

The cognitive-behavioral therapy (CBT) showed decreased suicidal behavior in patents with BPD when it compared to treatment as usual

(TAU) group, as they were more likely to have suicidal attempt. In addition, CBT showed helpful effects on hopelessness and impulsivity, and proved better long-term outcomes, and found to be most effective when compared to Rogerian supportive therapy (RST). Cognitive rehabilitation improved psychosocial functioning markedly at endpoint, when compared to psycho-education. In addition, it was found to be effective in treatment of post-traumatic stress disorder (PTSD). In treatment of major depression, combined treatment with CBT and pharmacotherapy has greater effects on anxiety symptoms and on patients' perception of psychological functioning, while interpersonal therapy (IPT) or fluoxetine plus pharmacotherapy has more of an impact on patients' perception of social functioning and on interpersonal problems. In comparing cognitive analytic therapy (CAT) with manualised good clinical care (GCC) it's found that; there was no significant change between the outcomes of the treatment groups.

Manual Assisted Cognitive Treatment (MACT) was associated with expressively less recurrent DSH upon completion of the intervention and with significantly reduction in DSH frequency and severity. And it was better in treatment than TAU alone. MACT also was associated with significant decrease in BPD symptoms and suicidal ideation. When Therapeutic Assessment was added to MACT in treatment of BPD it did not improve treatment, but it was associated with some better clinical improvement.

Combination between cognitive behavior therapy and treatment as usual (CBT + TAU) in treatment of BPD does not appear to reveal any significant cost-effective benefits when compared to TAU. Surprisingly another study concluded that; (CBT + TAU) can bring clinically significant variations in relatively few clinical sessions. Systems Training for Emotional Predictability and Problem Solving (STEPPS) for borderline personality disorder showed better advance in global functioning and BPD-related symptoms when compared to TAU. Results showed a marked reduction in oversimplifications in patients who acknowledged motive oriented therapeutic relationship (MOTR), compared to the patients who received the psychiatric-psychodynamic treatment.

Table 1: summary of the findings of included studies regarding interventions of BPD

Reference of article	Sample size	Sex	Participants meeting DSM or ICD criteria for personality disorder	Type of borderline personality disorders	Type on cognitive therapy	Duration of therapy	Comparison to (drug or psycho-therapy)	Effectiveness of cognitive therapy (RR,)	Effectiveness of comparison intervention
Neacsiu *et al.*[11]	101	Women	Participants met criteria for BPD	Suicidal and self-injuring women with BPD	Dialectical Behavior Therapy (DBT)	2 years (one year of treatment and one year of follow-up)	Community Treatment by Experts (CTBE)	DBT has unique effects on improving the expression of anger and experiential avoidance.	Results indicate that DBT decreased experiential avoidance and expressed anger significantly more than CTBE
Leppänen *et al.*[12]	112	Not reported	The Structured Clinical Interview for DSM-IV Personality Disorders was used	Para-suicidal behavior, Or consider-able emotional instability	Schema-focused therapy and dialectical behavioral therapy	1 year	Treatment as usual (TAU) patients	CTBE patients who attended the combined treatment model showed a significant reduction	Patients receiving treatment as usual did not demonstrate any significant changes in schemas.

Neacsiu *et al.*[13]	108	Women	Participants met criteria for BPD	Suicidal and self-injuring women with BPD	Dialectical Behavior Therapy (DBT)	16 months (one year of treatment and four months of follow-up)	1/community treatment by experts (CTBE) 2/community-based non-behavioral treatment. 3/treatment as usual (TAU)	DBT skills use fully mediated the decrease in suicide attempts	A non-significant effect for condition and a non-significant interaction between time in treatment and control condition
Farrell *et al.*[14]	32	Women	Diagnostic Interview for Personality Disorders	Suicide attempts and self-injury	Schema-focused therapy (SFT) & treatment-as-usual (TAU)	Six-month follow-up	Treatment-as-usual (TAU) alone	Significant reductions in BPD symptoms and improved global functioning with large treatment effect sizes were found in the SFT-TAU group	The TAU group showed little improvement, or even some deterioration, over the fourteen months of the study
Davidson *et al.*[15]	106	84% females, 16% males	Structured Clinical Interview for DSM–IV Axis II Personality Disorders	Suicide attempts and self-harm	Cognitive-behavioral therapy for personality disorders (CBT-PD)	6-year follow-up.	Treatment as usual (TAU)	The gains of CBT-PD over TAU in reduction of suicidal behavior. Length of hospitalizatio n were lower in the CBT-PD group.	The TAU group were more likely to have no suicide attempts compared with those in CBT–PD group
Cottraux *et al.*[16]	65	Not reported	Patients were to meet the DSM-IV criteria for BPD	Suicide attempts and self-harming behavior	Cognitive therapy (CT)	1 year	Rogerian supportive therapy (RST)	CT retained the patients in therapy longer, showed earlier positive effects.	CT was significantly better than RST on the CGI Improvement scale.
Harned *et al.*[17]	51	Women	The Structured Clinical Interview for Axis II DSM-IV (SCIDII)	Suicide attempts and self-harming behavior	Dialectical behavior therapy (DBT)	1 year	Pre-treatment	PTSD were significantly less likely to become eligible for PTSD treatment	Not reported
Morey *et al.*[18]	16	13 women 3 males	DSM-IV Personality Disorders DIPD-IV	Suicide attempts and self-injury	Manual Assisted Cognitive Therapy (MACT)	Not reported	Therapeutic Assessment + MACT condition (TA+MACT)	MACT was associated with significant reductions in BPD features and suicidal ideation	The TA augmentation did not improve treatment retention but it was associated with somewhat

									greater clinical improvement.
Linehan *et al.*[19].	28	Women	Structured Clinical Interview for DSM-III-R and PDE	Substance use, anxiolytics, or polysubstance use disorder on the SCID.	Dialectical Behavior Therapy (DBT)	1-year treatment & 16 months follow up	Treatment-as-usual (TAU)	DBT significantly reduced drug abuse than did TAU.	Treatment-as-usual has been shown to be less effective than DBT in treating drug abuse
Brown *et al.*[20]	32	88% women and 12% men	Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II;	Suicide attempts and self-injury	Not reported	1-year treatment, 6 months follow up (18 months)	Psychotherapy	Significant decreases in suicide ideation, hopelessness, and depression.	Not reported
Pascual *et al.*[21]	70	Women (74 %) Men (26%)	Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II) and (DIB-R)	Not reported	Cognitive rehabilitation (CR)	16 weeks treatment & 6 months follow-up	Psycho-education (PE)	Cognitive rehabilitation increased psychosocial functioning significantly at endpoint	Psycho-educational intervention showed a significant enhancement of depressive symptoms and attention functioning.
Clarke *et al.*[22]	131	Women	DSM-IV	Post-traumatic stress disorder (PTSD)	Cognitive processing therapy (CPT)	Not reported	Prolonged exposure (PE)	Women benefit significantly from cognitive-behavioral treatment for PTSD.	Not reported
Bellino *et al.*[23]	35	Not reported	Structured Clinical Interview for DSM-IV Axis I and II disorders.	Major depression	Cognitive therapy (CT) plus pharmaco-therapy	24 weeks	Interpersonal therapy (IPT) or fluoxetine (plus Pharmaco-therapy)	Combined treatment with CT has greater effects on anxiety symptoms.	Combined treatment with IPT has more of an impact on patients' perception of social functioning and on interpersonal problems
Palmer *et al.*[24]	106	Not reported	Structured Clinical Interview for DSM IV Axis II Personality Disorders	Suicidal act or self-mutilation	Cognitive behavior therapy plus treatment as usual (CBT + TAU)	1 year	Treatment as usual alone (TAU)	The cognitive therapy does not appear to demonstrate any significant advantage	A higher inpatient hospitalization costs incurred in the TAU group, and (CBT + TAU) was less cost, but statically not significant
McMain *et al.*[25]	180	Women	Suicidal or non-suicidal	Suicidal or non-	Dialectical behavior	1 year	General psychiatric	No significant	No significant differences

			self-injurious episodes	suicidal self-injurious	therapy		management	differences were found.	across any outcomes were found between groups.
Weinberg *et al.*[26]	30	Women	(DSM-IV) and (DIB-R)	Para-suicidal criteria	Manual Assisted Cognitive Treatment (MACT)	6 months	Treatment as usual alone (TAU)	MACT significantly reduce DSH	TAU was less effective than MACT
Black *et al.*[27]	164	Not reported	Structured interview for DSM-IV Personality (SIDP-IV)	Self-harming	Systems Training for Emotional Predictability and Problem Solving (STEPPS) + (TAU)	20-week trial and a 1-year follow-up	Treatment as usual alone (TAU)	Greater improvement in global functioning and BPD-related symptoms.	Not reported
Chanen *et al.*[28]	164	Not reported	DSM-IV criteria	Not reported	cognitive analytic therapy (CAT)	2 years (24 months)	Manualised good clinical care (GCC)	There was some evidence that patients allocated to CAT improved more rapidly	There was no significant difference between the outcomes of the treatment groups
Kramer *et al.*[29]	20	18 females 2 males	Structured Clinical Interview for DSMIV-SCID-II	Paranoid PD, narcissistic PD & co-morbid disorders,	Motive-oriented therapeutic relationship (MOTR)	1-year treatment and 2 years follow up	Psychiatric-psycho-dynamic treatment	Reduction in in MOTR, compared to psychiatric-psychodynamic treatment.	Psycho-dynamic treatment is less effective than MOTR
Linehan *et al.*[30]	26	Women	DSM-III-R and Diagnostic Interview	Para-suicidal behavior	Dialectical behavior therapy	1 year	Treatment as usual	Dialectical behavior therapy is a promising psychosocial intervention	TAU therapy less effective than DBT
Davidson *et al.*[6]	106	Not reported	Structured Clinical Interview for DSM IV Axis II Personality Disorders (SCID-II)	In-patient psychiatric hospitalizations or accident and emergency room contact or suicidal acts	Cognitive behavior therapy + treatment as usual (CBT + TAU)	1-year treatment and 1 year follow up	Treatment as usual alone (TAU)	CBT can deliver clinically important changes in relatively few clinical sessions.	TAU is found generally less effective when used alone
Pasieczny and Connor[31]	90	84 females 6 males	DSM-IV-TR criteria for BPD	Self-harm, commonly substance use disorders, depressive disorders.	Dialectical behavior therapy (DBT)	6 months	Treatment as usual (TAU)	DBT to patients within routine public mental health is more cost effective.	The study found that the TAU provided was less clinically effective and cost effective than DBT

Thompson-Brenner *et al*.[32]	50	Not reported	DSM-IV Axis I	Bulimia nervosa (BN) have borderline personality disorder (BPD)	Focused CBT-E (CBT-Ef)	20 weeks trial, and at follow-up 6 months	Broad CBT-E (CBT-Eb)	CBT-Ef was more effective for patients with relatively less severe BPD symptoms	CBT-Eb appears to be more efficacious for patients with more severe BPD symptoms.
Mueser *et al*.[33]	108	Not reported	a DSM–IV Axis I	Posttraumatic stress disorder (PTSD)	Cognitive-behavioral therapy (CBT)	4 to 6 months treatment and 4 to 6-month follow-up	Treatment as usual (TAU)	Severe mental illness and PTSD can benefit from CBT	TAU also improved, but lack CBT

DISCUSSION

Cognitive therapy is thought to be effective in treatment of borderline personality disorder (PBD) [3]. This review aimed to evaluate the effectiveness of cognitive therapy in patients with PBD in all randomized controlled trials.

Dialectical behavior therapy (DBT) was found to be effective in 8 studies, while only one study found that it added no effects to the treatment of PBD [20]. DPT when compared to treatment as usual (TAU) was found to be cost effective [30], as it added effects that shorten the duration of the disease and improve the prognosis. It also found to be beneficial in improving interpersonal functioning when the (TAU) was the comparison group [24]. Another important benefit was in treatment of drug abuse, post-traumatic stress disorder (PTSD) suicidal attempts and depression, as the patients showed significant improvement by this type of treatment [12, 16, 25]. This can be justified by: those type of patients need beside the usual medical treatment to a unique type of treatment like (DPT) that can tough their sense and solve their main problem that lead them to abuse drugs.

This review revealed that, the known TAU usually show improvement in the treatment of BPD, but the effect was little when compared to schema focused therapy in two randomized controlled trials [13, 21]. The schema focused therapy showed a unique effect in reduction in the symptoms of BPD and the severity of the disease.

Another randomized controlled trial included in this review studied the effect of cognitive-behavioral therapy (CBT). It was found that CBT was more effective than the usual treatment or when adding it to the treatment plan in patients with PTSD [26, 27]. It was observed that, unlike other type of treatment CBT has long term effects on the patients, and this may play an important role in prevention of relapse in patients with depression, suicidal attempts, hopelessness and impulsivity [14, 15, 29]. Regarding the psychosocial functioning, it also showed improvement with this type of treatment [33]. These important criteria to the usual methods of treatment; as normalization of the social life in addition to the patient, it helps the family and the surrounding community as well. Also, patients with anxiety disorder and major depression get benefits from combination of CBT and pharmacological treatment [29]. Using CBT may help in define the precipitating factors and the in finding solutions to the treatment beside the medical treatment. Beside these important positive effects one study failed to find a significant cost effect when using the CBT compared to the TAU [19]. This means that; the effects of CBT are mainly in the patients' treatment and outcome and not in the cost of the treatment.

Manual Assisted Cognitive Treatment (MACT) showed in many randomized trials that was included in the study a significant decrease in suicidal ideation and the symptoms of BPD as well [17]. In addition, it also showed significantly reduction in DSH frequency and severity [22]. This means that MACT is effective in treatment of BPD and improve patients' outcome.

The last two types of cognitive therapy that included in this review were systems Training for Emotional Predictability and Problem Solving (STEPPS) and motive oriented therapeutic relationship (MOTR). Like other types of conative therapy, patients who received those type of treatments showed peter improvement and reduction of the symptoms [23, 31].

CONCLUSION

We concluded that the use of cognitive therapy is important in treatment of borderline personality disorder in addition to pharmacological treatment and treatment as usual. Doctors must choose the most effective type of cognitive therapy according to

their patients' diagnosis, duration of the treatment and the available resources.

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