Original Research Article

Effectiveness of Cognitive behavior therapy of panic disorder in adults: A naturalistic study from a Medical College Hospital

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Abstract

Background: Panic disorder is the most prevalent among anxiety disorders in psychiatry clinics. Randomized controlled trials and open studies in research settings and studies from naturalistic settings have proved the efficacy and effectiveness of cognitive behavior therapy (CBT) for panic disorder (PD). Panic disorder responds in only a few CBT sessions. In India studies in this regard are practically non-existent.

Materials and methods: This study was a part of study titled "The utilization pattern and effectiveness of Cognitive Behavior Therapy for anxiety disorders in adults: A naturalistic study from a medical college hospital". Out of 80 anxiety disorder patients taken for study, 26 PD patients attended at least one CBT session. In these 26 patients' pre and post CBT scores on Panic Disorder Severity Scale (PDSS) were assessed and analyzed for clinically significant change (CSC) and response rate. Effect size, refusal and dropout rates were assessed.

Results: Pre and post PDSS score reduction was statistically significant at P<0.5. Large effect size of 1.78 was noted. Though 30% of patients were on medication, they were stably on same medication throughout the evaluation. CSC, as defined by twin criteria proposed by Jacobson and Truax, was noted in 57% of patients. In the intent to treat analysis number needed to treat to achieve CSC/recovery was about four. Response (defined as 40% reduction in PDSS rating) rate was 88%. There was about 50% CBT refusal rate.

Conclusions: This open prospective naturalistic study shows that CBT of panic disorder can be effective, when it is conducted by a psychiatrist who has not received rigorous training from certified

training centers. Effect size is comparable to that observed in other settings. CBT can be integrated along with medications for PD in general hospital psychiatry setting. Response and recovery can be obtained in as few as 5 sessions. More than half of treatment seeking panic disorder patients refused to take cognitive behavior therapy reducing its effectiveness.

Key words

Cognitive behaviour therapy, Panic disorder, Adults.

Introduction

Randomized controlled trials [1] in research settings have proved the efficacy of cognitive behavior therapy (CBT) for panic disorder (PD) with the between group effect size of 0.35, indicating a small to medium effect size. In contrast, studies [2] from same settings but with uncontrolled study design have reported pre and post effect size of 1.53, a very large effect size. Effectiveness studies [3] from naturalistic settings have reported pre and post effect size of 1.01. Recent Cochrane [4] review indicates that even a combination of benzodiazepines and antidepressants is no superior in efficacy or dropout rates compared to psychotherapies. In India studies in this regard are practically non-existent [5] with 2 exeptions [6, 7]. In a review [8] Kuruvilla has lamented about the tenuous relation between behavior therapy research and Indian psychiatry. Panic disorder is the most prevalent anxiety disorders in psychiatry clinics [7, 9]. Panic disorder responds in only a few CBT sessions [10-12]. Hence it can be integrated with routine psychiatric clinical care. Because of these considerations this naturalistic study was planned.

Materials and methods

This study was started after obtaining approval from institutional ethics committee. Informed consent was obtained from patients. Patients were screened for the inclusion and exclusion criteria and diagnosed using Diagnostic and Statistical Manual of Mental disorders, 5th edition (DSM-5). Eighty consecutive adult patients with anxiety disorders (panic disorder with or without agoraphobia, obsessive compulsive disorder, social phobia, generalized anxiety disorder, post-traumatic stress disorder and specific phobias),

aged 18 to 65 years, and attending psychiatry department of a medical college during February 2017 to November 2017 were the sample of this original study. Data related to the 26 patients with panic disorder who attended at least 1 session and one follow up subsequently is analyzed for this publication. Patients with psychotic disorders, organic brain syndromes and mental retardation, severe drug dependence and agoraphobia only were excluded. Patients opting for drugs were given medications and patients opting for CBT only were treated accordingly. Patients opting for both were given a combination. CBT was given free of cost.

Assessment

Socio-demographic and disorder specific details were collected using semi-structured pro-forma. Baseline and at subsequent every follow up anxiety rating was recorded using Panic Disorder Severity Scale (PDSS) [13]. This scales has been validated and used in research extensively. Test retest reliability (r) is considered as 0.83 for the calculation of reliable change index for this study [12]. A change in pre and post CBT score 6 and more is considered reliable change. Cut off of 5 and less [14] is taken for clinically significant change.

CBT intervention

Weekly, bi-weekly and even daily CBT sessions were conducted on an outpatient or inpatient basis. CBT sessions were conducted for 30 to 45 minutes using Beck's CBT model [15] and 'Process Based CBT' an integrated model [16] which combines Acceptance and Commitment Therapy and mainstream Beck's CBT model. Patients not keeping the scheduled appointments and coming casually were also treated and

followed up. Patient who attended CBT were followed up for 2 months.

Therapist

CBT was conducted by the first author. The first author has practiced CBT on this type of patients for about a decade. He has received online training in CBT from Beck institute and ACT by Dr Russ Harris. He has reported his preliminary observation in the past.

Statistical analysis

Statistical analysis is done using software SPSS version 18. Effect size, reliable change and clinically significant change were found out as described by Jacobson and truax [17].

Results

As per **Table - 1**, there were 36 (58%) patients who opted for only medication and 26 (42%) patients who attended at least one CBT session and one follow up. At the beginning of CBT, 12

patients were on medication and 8 were still taking medication at the end. Most of those 8 were on a combination of selective Serotonergic reuptake inhibitors and Clonazepam combination. These 8 patients continued to take the same medication which they were taking at the baseline. Maximum CBT sessions attended were six, minimum was one and the mean was 3.55. Pre CBT mean PDSS score was 13.96 and the post CBT score was 5.54. This pre and post mean difference was significant at P=0.01 (t=8.66, df= 25). This gave an effect size (Cohen's d) of 1.78. As per Jacobson and Truax criteria patients who had reliable change were 19, end scores $\leq$ 5 were 18. Both these criteria were met by 15 patients. Hence 15 patients can be said to have CSC or recovery. This translates into the number needed to treat was 1.7 and for intent to treat sample it was 4. **Figure - 1** shows the mean scores of PDSS scale ratings after the completion of CBT sessions. CSC appeared after 4 to 5 sessions.

Table - 1: Outcome characteristics of patients who had CBT.

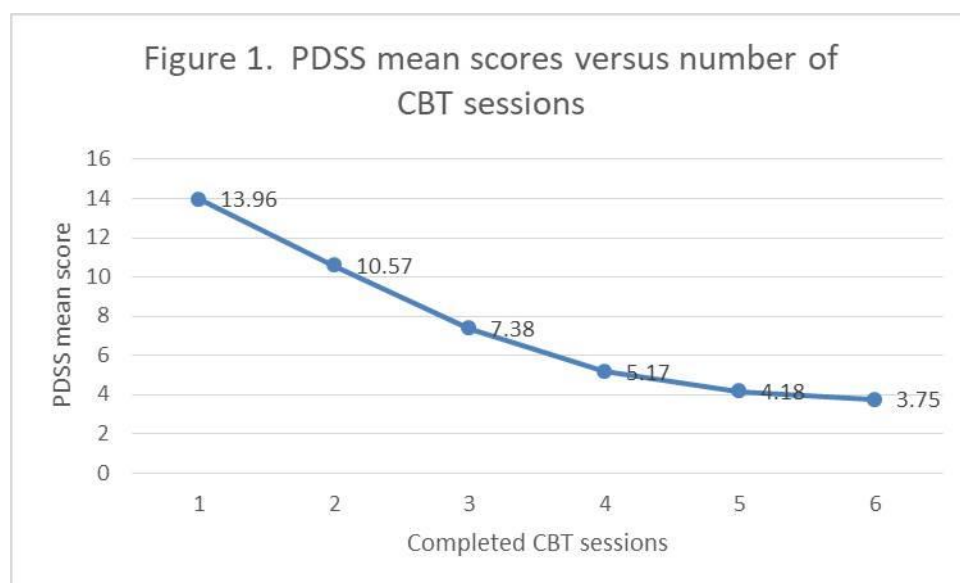| Variable	Number/percent
Number of patients	62
Patients opted for medication	36(58%)
Patients opted for CBT	26(42%)
Pretreatment mean in CBT group	13.96 $\pm$ 4.72
Post treatment mean in CBT group	5.54 $\pm$ 3.90
Reliable change	19(73%)
Beyond 2 standard deviations/score $\leq$5	18(69%)
Both of above/clinically significant change	15(58%)
Response (40%reduction in PDSS score)	23(88%)
Number needed to in treat intent to treat sample	4
Number needed to treat	1.7

Discussion

The mean pre CBT PDSS score of 13.96 is quite close to the means 12.9 and 13.9 reported in large scale trails [17, 18] of PD. Hence patients of this study are similar to those patients of large scale trials in PD disorder intensity. This is important as in this study 12 patients were using medications in the onset. It appears that in spite of medications these patients were ill and hence sought CBT. At the end only 8 patients were on

medications indicating some improved enough to stop medications. No patient received higher than the initial medication dosage. Only 3 patients were newly started on medications but in these patients medications were stopped soon as they improved and wanted to stop medications.

Reduction in the pre and post PDSS mean rating was significant at p=0.5. The effect size using Cohen's d was 1.78. This is a very large effect

size (more than 0.8 is considered large effect size). Still it is close to the range 1.53 reported in the uncontrolled studies in the research settings [2]. This high effect size may be partly due to the concurrent medication used by the 8 patients. Further analysis using Jacobson and Truax [17] criteria, reliable change index (RCI) was calculated to be 3.1. Individuals having change in the scores more than 1.9 times the RCI were said to be reliably changed. In this study 19 patients met this criterion. Another criterion they proposed is the clinically significant change. Patients moving 2 standard deviations from the mean are said to have clinically significant change (CSC). A cut off score of 5 and less taken for this purpose which is consistent with the criterion proposed for remission or recovery [14].

In this study 18 patients had scores 5 and below. Both criteria were met by 15 (57%) patients. These patients have statistically and also clinically improved as defined by Jacobson and Truax. Large scale studies [18, 19] have reported response (defined as 40% reduction in PDSS rating) rate of 48% and 65%. This study revealed 88% response rate. Study from India [6] has reported 86% recovery rate using PDSS scale.

Most patients improved with 4 to 5 CBT sessions. This is consistent with the studies [10-12] which have reported rapid improvement. Even in the large scale study [18] most of the improvement was seen in 6 sessions. Mean number of CBT sessions attended in this study were 3.2.

Figure 1. PDSS mean scores versus number of CBT sessions

Effectiveness of an intervention is also decided by the refusal rate. Taste of the pudding is in eating. In this naturalistic study more than half (36 patients) of intent to treat sample refused CBT. Because of not fixing number of session prior to CBT, dropout is defined in the naturalistic settings [20] as termination before reaching CSC. In this study 3 patients terminated before reaching CSC. Refusal and premature dropout added up to 63%. In the intent to treat analysis number needed to treat to achieve CSC/recovery was about four.

Strength of this study is its uniqueness which examines the effectiveness of CBT in psychiatry department of a medical college in this country. Limitation of this study includes its open design, concurrent medication use non blind assessment and lack of long term follow up. A control group could not be included as there was a large dropout and irregular follow up in patients who opted for medication only. Continuation of medication would have contributed to large effect size. Intervention and assessment is done by the same person. This might have biased the ratings.

Conclusions

This open prospective naturalistic study shows that CBT of panic disorder can be effective, when it is conducted by a psychiatrist who has not received rigorous training from certified training centers. Effect size is comparable to that observed in other settings. CBT can be integrated along with medications for PD in general hospital psychiatry setting. Response and recovery can be obtained in as few as 5 sessions. More than half of treatment seeking panic disorder patients refused to take cognitive behavior therapy reducing its effectiveness.

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