

## **Does Psychogenic Non-Epileptic Seizures Disorder (PNES) Respond to Cognitive Behaviour Therapy?: A Preliminary Research**

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### **Abstract**

*Patients who suffer from PNES often exhibit a higher incidence of symptoms such as anxiety and depression than patients with epilepsy, along with a reduced quality of life due to the effect of the seizures themselves. This study aims to examine the effectiveness of cognitive behavioral intervention in the treatment of PNES. Our primary objective is to assess the effectiveness of CBT in reducing seizure frequency. The study adopted a two-group comparison with pre and post assessment design. Sample: The sample consisted of 50 patients sub sequentially allotted to the Cognitive Behavior Therapy (n=30) and waiting control (n=20) groups. Along with the socio-demographic sheet seizure diary to record the frequency of seizure episodes, Hamilton Depression and Anxiety Rating scale (HDARS) tools were administered. The CBT group provided comprehensive cognitive behaviour therapy and the waiting control group provided only standard medical care. Conclusion: In this small clinical trial, treatment with the CBT for PNES appears to be a beneficial approach in helping patients with PNES reduce their seizure frequency, anxiety and depressive symptoms compared to standard medical care.*

**Key words:** PNES, CBT, Anxiety, Depression.

### **Introduction:**

Psychogenic nonepileptic seizures (PNES) are an uncomfortable topic, one which is difficult for both patients and healthcare professionals to discuss as well as treat, and yet it is estimated that PNES are diagnosed in 20 to 30% of patients seen at epilepsy centers for intractable seizures. Moreover, in the general population the prevalence rate is 2-33 per 100,000, making PNES nearly as prevalent as multiple sclerosis or trigeminal neuralgia. Despite these startling statistics, PNES has largely remained a

conversation held behind closed doors and in hushed tones throughout the medical community until now.

Epileptic seizures (ES) one of the most common neurological disorders, may be defined as a transient disturbance in brain function due to paroxysmal neuronal discharges. The non epileptic seizures refer to episodes that resemble epileptic seizures but that are not due to proximal neuronal discharges. A wide variety of medical problems can be misinterpreted as epileptic seizures. For

example syncope episodes caused by cardiac arrhythmias, vasovagal attacks or other transient cardiovascular events may be confused with epileptic events. In children, migraine, breath holding spells are also in the list. Non epileptic seizure (NES) may also have a psychological origin. As with medical disorders there are several other psychological disorders which are confused with epileptic seizures. These include panic attacks, hyperventilation attacks, and rage attacks. Most common is conversion disorder or dissociative episodes.

The term “psychogenic non epileptic seizures” (PNES) specifically refers to that subgroup of patients with NES in whom there is no physiological abnormality that explains the episodes and when there is a probable psychological reason to spells. Other synonymous terms are extent in the literature. The term “pseudoseizure” or “pseudoepilepsy” are often used.

Diagnosis of PNES is based on a history consistent with conversion disorder and confirmation of the diagnosis on prolonged video EEG (VEEG). Monitoring reveals the lack of epileptic form EEG changes during clinical events associated with alteration of consciousness or motor, sensory and/or autonomic phenomena;

normal alpha rhythm (or no change in background rhythm) with or without the alteration of consciousness; and non stereotypic nature of the event. Typically, no sustained response to antiepileptic drugs (AEDs) is found. A history consistent with PNES is also used in making the diagnosis . Some patients who have possible or confirmed diagnosis of Epileptic seizures (ES) are considered to carry dual diagnosis of PNES/ES.

### **Treatment and management issues**

Since the introduction of VEEG, epileptologist have had increased diagnostic capability, especially as regards the differentiation of ES from non epileptic seizures, which has led to many of the advances in the understanding and treatment of non epileptic seizures. A specific traumatic event, such as physical or sexual abuse, incest, divorce, death of a loved one, or other great loss or sudden change, can be identified in many patients with PNES. PNES may be more likely in people with a history of neurological/other physical disease and also can follow epilepsy surgery. It was reported that 10-37% of patients with epilepsy may also have PNES.

A Cognitive-Behavioural Model of PNES (McMackin, 2000) proposes that patients with PNES have specific belief systems regarding inhibiting expression of emotion as a result of their childhood experiences this means that they cannot deal with intense emotional experiences and develop physical symptoms in the form of seizures.

Patients who suffer from PNES often exhibit a higher incidence of symptoms such as anxiety and depression than patients with epilepsy, along with a reduced quality of life due to the effect of the seizures themselves. It is recognized, however, that conditions such as anxiety and depression often respond well to CBT. Modified from a CBT for patients with epilepsy workbook, the treatment manual has been developed over the past five years to address core issues in patients with PNES by LaFrance.

LaFrance and the researchers have outlined a clinical model for management of PNES, where a key component is to identify precursors, precipitants and perpetuating factors of the seizures. LaFrance says, "Based on the tendency of patients with PNES to somatize (to manifest mental pain as pain in one's body), they hypothesized that identifying and modifying cognitive distortions and environmental triggers for PNES would reduce

PNES." The CBT to be effective in terms of reducing the frequency of PNES. He noted, "Upon completion of the CBT, 16 of the 21 participants reported a 50 percent reduction in seizure frequency, and 11 of the 17 who completed the CBT reported no seizures per week by their final CBT session." He also pointed out, "treating the seizure is not the sum total of treating the patient with a seizure disorder, so they assessed other important measures, as well." The evaluation of quality of life scores, as well as assessments of depression, anxiety, somatic symptoms and psychosocial functioning also showed statistically significant improvement from baseline to final session. With this in mind we started a preliminary study to assess the effectiveness of CBT in the treatment of PNES in our setup.

**Aim:**

To examine the effectiveness of cognitive behavioral therapy in the treatment of Psychogenic Non Epileptic Seizures (PNES) in comparison to standard medical care.

**Objectives:**

1. Assessment of the base line seizure frequency, anxiety and depressive symptoms in both the groups.
2. To study the differences between the two intervention groups.

**Hypotheses:**

1. There would be no difference at post intervention in both the groups on anxiety scores, depression scores and seizure frequency in persons having psychogenic non epileptic seizures.

### **Methodology:**

**Design:** The study adopted a quasi experimental control group design with pre and post assessment comparison.

**Sample:** The sample consisted of 50 patients based on the exclusion and inclusion criteria given below and randomly allotted to the CBT (n=30) and waiting control (WC) (n=20) groups. The CBT group was provided comprehensive cognitive behaviour therapy for three months in once weekly format and the WC group was provided only standard medical treatment in the form of anti-anxiety and anti-depressant drugs in stable and adequate doses on monthly basis.

### **Inclusion Criteria:**

- Age: 18-55 Years
- Gender : Any
- Video electroencephalogram (V EEG) confirmed diagnosis of PNES
- Have at least two non-epileptic seizure per month

- Able to complete self report symptom scales

### **Exclusion Criteria:**

- Sub-average intellectual functioning
- Co- existing epileptic seizures or other neurological conditions.
- Previous history of psychological treatment
- Major psychiatric disorder i.e. schizophrenia, psychosis etc.
- Current suicidality
- Serious medical illness requiring current hospitalization

### **Primary Outcome Measures:**

- Seizure frequency  
[ Time Frame: monthly ]

### **Secondary Outcome Measures:**

- Hamilton anxiety and depression rating scales (HADRS)

### **Procedure:**

After being diagnosed with PNES by video EEG monitoring (VEEG) and confirmed by a senior neurologist, informed consent was obtained from the participants. A total of 90 participants were screened and out of which 50 participants were fulfilling the inclusion

and exclusion criteria and gave the consent enrolled to two groups CBT (n=30) and Waiting Control (n=20) on simple random basis. Those selected in to the CBT group received once weekly sessions over 12 weeks of CBT. Those selected into the Waiting Control group received only standard medical treatment prescribed anti-anxiety and anti-depressant drugs in stable and adequate doses on monthly basis by the Neurologist. The seizure frequency, depression and anxiety symptoms were assessed at baseline, monthly basis and at treatment completion. Upon enrollment, subjects were evaluated. They have to keep a seizure diary, to evaluate their daily seizure activity. Further the subjects those

did not attended the OPD were also followed by phone calls at month 4<sup>th</sup> week, 8th week, and 12<sup>th</sup> week after enrollment, to assess seizure status, medication usage, and global functioning.

#### Statistical analysis:

Inferential statistical methods of analysis were used. Mean, standard deviation, t-test was used to find out the differences between the groups. Data was analyzed with the help of SPSS.

**Results:** Results are presented in table 1-4.

**Discussion:** The aim of this study was to examine the effectiveness of the cognitive behavior therapy in the treatment of Psychogenic Non Epileptic Seizures (PNES) as compared to standard medical treatment. From the result table 1 it is clearly seen that

**Table-1** Baseline mean, sd and t values on seizures frequency and anxiety and depression measures in both groups

Measures	n=30 CBT Group		n=20 WC Group		t values	Significance
	Mean	SD	Mean	SD		
Seizures frequency	.90	1.12	4.21	1.43	8.75	Highly significant
Anxiety	4.30	4.10	5.90	4.06	0.18	Not significant
Depression	4.62	2.14	7.75	4.39	0.88	Not significant

CBT group and WC groups were similar at baseline on seizure frequency, anxiety and depression measures as there were no significant difference observed on statistical

analysis. So, to find out the effects of any intervention it is recommended that groups do not have any baseline differences on primary or secondary outcome measures.

**Table - 2-** Post intervention mean, sd and t values on outcome measures between the groups

Measures	n=30 CBT Group		n=20 WC Group		t values	Significance
	Mean	SD	Mean	SD		
Seizures frequency	.90	1.12	4.21	1.43	8.75	Highly significant
Anxiety	4.30	4.10	5.90	4.06	0.18	Not significant
Depression	4.62	2.14	7.75	4.39	0.88	Not significant

Table 2 showed post intervention at three months after enrolling to the study, statistically highly significant differences between the groups on primary outcome measures for seizure frequency, hence hypothesis of the study is rejected which suggests CBT is effective treatment for reducing the seizures frequency in PNES as compare to standard medical care. But no significant differences were observed on anxiety and depression measures at post intervention hence hypothesis is accepted for the anxiety and depression scores. This suggests equal effectiveness of the CBT in comparison to pharmacological intervention in reducing the

anxiety and depressive symptoms in PNES. This may be because of small sample size.

Further, while analyzing it was also seen that pre to post changes were statistically significant in CBT group only this suggest greater effect size observed in the reduction of seizure frequency and anxiety , depressive symptoms (table 3). This indicates effectiveness of CBT in PNES. Whereas, in WC group there were no significant differences found from pre to post on seizure frequency and anxiety, depressive symptoms (table 4). This shows the superiority of CBT over standard medical care in the treatment of PNES.

**Table 3** Pre to post changes within the groups on measures of anxiety, depression and seizures frequency

Measures		CBT Group n=30		t value	Significance
		Mean	SD		
Seizures frequency	Pre	5.26	2.25	9.57	Very significant
	Post	.90	1.12		
Anxiety	Pre	8.10	5.17	7.49	Very significant
	Post	4.30	4.10		
Depression	Pre	7.40	3.45	2.41	Significant
	Post	4.62	2.14		

**Table 4**

*Pre to post changes within the groups on measures of anxiety, depression and seizures frequency*

Measures		WC Group n=20		t value	Significance
		Mean	SD		
Seizures frequency	Pre	5.40	2.45	0.02	In significant
	Post	4.21	1.43		
Anxiety	Pre	7.85	5.44	0.06	In significant
	Post	5.90	4.06		
Depression	Pre	7.75	4.39	0.001	In Significant
	Post	4.55	1.87		

Further it was also noted that The dropout rate in the CBT group was very low (10%) as more than 50% patients completed 12 sessions of CBT and rest of the patients completed 8 sessions where as in waiting control group the dropout rate was high. Only 40% of the patients came for regular follow up in waiting control group. This also suggests the importance of CBT in the compliance of PNES treatment. This may be because of the kind of therapeutic intervention for example CBT which includes the psycho-education part which (includes the development of symptoms and its maintenance according to the cognitive point of view) helps the individual with PNES to develop a positive attitude towards their problem and treatment. This understanding was achieved by performing a demonstration by the therapist by differentiating symptoms of PNES and true

epileptic seizures. It increases their motivation which further facilitates improvement. Whereas, in WC no such information is provided regarding the illness, they were just assured about their treatment. Overall findings are consistent with the other research findings of La Farance, 2000. They also showed overall 40-60% remission rates and 35-40% reduction in seizure frequency.

Finally, the findings are promising and has been consistent with previous research findings, in which other psychological treatments were also been compared and found to be effective than standard medical care. But there is a need to compare between different psychological treatment for the treatment of PNES in which CBT can be compared to Psychodynamic Psychotherapy, Biofeedback therapy, interpersonal psychotherapy. Since standard

medical treatment is no more effective than the CBT in the current research, but to find out the effectiveness of standard medical treatment this has to be compared with placebo control group whether these changes in anxiety and depression symptoms are because medication or these are because of time or cross sectional findings. So, well planned, double blind, randomized control group design with large sample size studies are the need of the time which also include the different psychological approaches to further strengthen the treatment approach in the particular PNES.

The main limitations of the study was, CBT intervention was not validated by an independent therapist this may have therapist bias, also the psychosocial functioning and quality of life was not assessed to further support the findings.

**Conclusion:** In this small clinical trial, treatment with the CBT for PNES appears to be a beneficial approach in helping patients with PNES reduce their seizure frequency, anxiety and depressive symptoms.

### References:

- LaFrance, W. C. (2000) How many patients with psychogenic nonepileptic

seizures also have epilepsy? *Neurology*, 58 (6), 990-1.

- LaFrance, W. C. & Devinsky, O. (2002) Treatment of nonepileptic seizures. *Epilepsy and Behaviour*, 3(5), 19-23.
- LaFrance, W.C. & Devinsky, O. (2004) The treatment of nonepileptic seizures: historical perspectives and future directions. *Epilepsia*, 45(2), 15-21.
- LaFrance, W.C. & Barry, J.J. (2005) Update on treatments of psychological nonepileptic seizures. *Epilepsy and Behaviour*, 7(3), 364-74.
- LaFrance, W.C., Alper, K., Babcock, D., Barry, J.J., Benbadis, S., Caplan, R., Gates, J., Jacobs, M., Kanner, A., Martin, R., Rundhaugen, L., Stewart, R., & Vert, C. (2006) for the NES Treatment Workshop participants. Nonepileptic seizures treatment workshop summary. *Epilepsy and Behaviour*, 8(3), 451-61.
- LaFrance, W.C., Rusch, M.D. & Machan, J.T. (2008) What is "treatment as usual" for non-epileptic seizures? *Epilepsy and Behaviour*, 12(3), 388-94.
- LaFrance, W.C. (2008) Psychogenic nonepileptic seizures. *Current Opinion in Neurology*, 21(2), 195-201.