

# Randomized Trials of Psychotherapeutic Treatment for Psychogenic Seizures: Scoping Review

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## ABSTRACT

**Background:** Psychotherapy improves seizure frequency and psychosocial aspects in psychogenic nonepileptic seizures (PNES). Although randomized controlled trials (RCTs) on different psychotherapies have been conducted for almost two decades now, no review has exclusively assessed RCTs of different psychotherapies.

**Methods:** The objective was to review RCTs of psychotherapy for PNES, to understand the impact of different psychotherapies. Eligibility criteria included full-text articles, English articles, published between years 2000 and 2020, randomized trials of psychotherapy, and the adult population. Databases included PubMed, ProQuest, Google Scholar, ScienceDirect, EBSCO, PsycINFO, Cochrane, and a random google search was conducted. Rayyan software was used to include articles that met our eligibility criteria. The search was carried out independently by two researchers

**Results:** Based on the eligibility criteria, seven studies were found. Amongst them,

cognitive behavioral therapy (CBT) was the most researched and seemed more effective when paired with standard medical care (SMC) or sertraline. Comparisons of CBT and brief psychodynamic therapy did not reveal significant differences. Other psychotherapies included motivational interview+psychotherapy, which significantly reduced seizure frequency and improved psychosocial functioning. Paradoxical intention therapy also reduced PNES symptoms; however, it has not been researched in the last 15 years. Group psychoeducation seems to have an impact only on psychosocial functioning and not on seizure frequency.

**Conclusion:** CBT paired with SMC or sertraline and MI along with psychotherapy yields the most effective results for PNES in reducing seizure frequency and improving psychosocial functioning.

**Keywords:** Psychogenic nonepileptic seizures, dissociative seizures, pseudoseizures, nonepileptic attack disorder, RCTs, psychotherapy

Patients with psychogenic nonepileptic seizures (PNES) show improvement in seizures and psychosocial aspects when treated with psychotherapy. However, recent reviews have stressed the importance of suitable methodology<sup>1</sup>: especially, need for controlled trials have been stressed upon.<sup>2</sup> Several psychotherapies such as paradoxical intention therapy,<sup>3</sup> psychodynamically oriented therapy,<sup>4</sup> group therapy,<sup>5,6</sup> and psychoeducational therapy<sup>7</sup> have shown positive results in reducing seizures. Despite the existence of so many types of psychotherapies and their ability to reduce seizure frequency and cause psychosocial improvements, no study has reviewed only randomized controlled trials (RCTs) that can clearly indicate the effectiveness of different psychotherapies. An RCT-based review is important as it informs the practitioners of the level of effectiveness of different psychotherapies and helps them choose accordingly in a clinical setup. This also helps health-care

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professionals explain the evidence to patients and trainees.

A meta-analysis found that psychotherapy can reduce seizures up to 50%. However, it considered only two RCTs, and the rest were uncontrolled or before-and-after designs. Further, that paper failed to point out psychotherapies that might be more beneficial compared to others.<sup>8</sup> Hence, this review aimed at understanding the effectiveness of different psychotherapies for psychogenic seizures by considering RCTs only.

## Methods

### Selection of Articles

The protocol was preregistered on the open science framework (<https://osf.io/fzspj>). Articles in English whose full-text versions were available, published between years 2000 and 2020, and RCTs with adult population were considered. We selected studies of RCTs of psychotherapy for psychogenic seizures with comparators of other psychotherapies or standard medical protocol. PubMed, ProQuest, Google Scholar, ScienceDirect, EBSCO, PsycINFO, and the Cochrane database were searched. After which, a random Google search was conducted. The last search was conducted on July 29, 2021. Search strategy was: Psychogenic epilepsy[ti] OR Psychogenic non epileptic seizures[ti] OR Dissociative seizures[ti] OR Pseudoseizures[ti] OR Non epileptic attack disorder[ti] AND RCT.

### Data Charting Process

Articles selected from different databases were stored using BibTeX or RIS in a citation format. Rayyan software was used to store and include or exclude the data. The authors determined six steps to complete the review.<sup>9</sup> Step 1 included removing duplicates. Step 2 involved excluding articles that were not in English and chapter publications. Step 3 involved excluding articles that did not have the psychogenic epilepsy, PNES, dissociative seizures, pseudoseizures, or nonepileptic attack disorder in the title. Step 4 excluded articles that were not related to psychotherapy. Step 5 excluded studies that are not RCTs. Step 6 excluded those that did not match other eligibility criteria. This process was

carried out independently by two different researchers (SH and MG).

### Data Items and Synthesis

Data items sought included psychotherapy used, comparator, number of sessions of psychotherapy, and primary and secondary outcomes. Once the RCTs were selected, each article was reviewed thoroughly to understand psychotherapy used, the number of sessions, designed comparator, and primary and secondary outcomes as outlined by the study. These were compared to other studies to understand the impact of different psychotherapies.

### Results

Details of the selection of articles are provided in **Figure 1**. Seven studies were finally selected according to the inclusion criteria. PEDro scale was used to understand the quality of all the selected RCTs. While four studies showed optimal score (motivational interview [9],<sup>14</sup> cognitive behavioral therapy [CBT] and standard medical care [SMC] in 2010 [8],<sup>11</sup> CBT and SMC in 2020 [8],<sup>16</sup> and paradoxical

intention [PI] therapy [8]<sup>10</sup>), two of them showed good scores (CBT with sertraline [7],<sup>12</sup> group psychoeducation [6]<sup>7</sup>), and one, poor (CBT and psychodynamic [4]<sup>13</sup>).

### Paradoxical Intention (PI) Therapy

PI was compared with psychopharmacology (diazepam). PI therapy, which was a six-week protocol, reported higher symptom reduction; that is, reduction in anxiety scores was higher for the PI therapy group as compared to the diazepam group. Additionally, symptoms improved by 93.3% for the PI group, whereas they decreased up to 60% for the diazepam group.<sup>10</sup>

### CBT

Two studies looked at CBT+SMC. Both of them compared it to SMC only. Both studies showed seizure reduction for the CBT+SMC group. One of the studies was a pilot study. This study conducted CBT for 12 weeks fortnightly, and they were hour-long sessions. Primary

FIGURE 1.

#### Details of Articles Excluded in Each of the Six Steps

Total no. of articles from databases (PubMed, ProQuest, EBSCO, Google Scholar, Science Direct, and Cochrane database) + Random google search = 357+5 = 362

Duplicates (17)  
Included = 345

Not English, Chapter and content not available (19)  
Included = 326

Not related to PNES (179)  
Included = 146

Not psychotherapy (120)  
Included = 26

Exclusion criteria = Not RCTs, Only Protocols, Pediatric population (19)  
Included = 7

outcome was seizure reduction which was superior for SMC+CBT as compared to SMC alone and secondary outcome was measured on the Work and Social Adjustment Scale (WSAS) and health service use for which both the groups showed improvement. Furthermore, employment and mood status was also assessed and both the groups showed no change. The other one was a multicenter study and it also conducted 12 sessions over 4-5 months and these were one-hour long sessions. Primary outcome was seizure frequency in which no difference was observed between both the groups. However, in secondary outcomes CBT+SMC group showed improvements for bothersomeness, longer seizure freedom in six months, psychosocial functioning, quality of life, psychological distress, clinical outcome, and lower somatic symptoms.<sup>11,16</sup> Another study that looked at CBT chose comparators with brief psychodynamic therapy (BPT) and a control group receiving no psychotherapeutic treatment. Patients who received therapy, received them over six months with CBT or BPT. This study observed no difference in terms of outcomes for CBT and BPT. Both the therapies reduced seizures significantly, and it was maintained until six months. Adding on to these, on all the measures of quality of life in epilepsy questionnaire, both CBT and BPT groups showed improvements up to three months and it increased at six months. In another multicenter pilot study, CBT-informed psychotherapy (CBT-IP) was administered for 12 weekly hour-long sessions that were compared with CBT-IP+sertraline, sertraline alone, and usual treatment. The primary outcome was seizure reduction where CBT-IP+sertraline group showed greater improvement in seizure frequency (59.3%) than CBT-IP alone (51.4%). In secondary outcomes, both the groups showed improvements in depression, anxiety, quality of life, and global functioning. However, only-sertraline and the usual treatment groups showed no improvement in either seizure frequency or other secondary outcomes.<sup>12,13</sup>

## Brief Group Psychoeducation

Brief group psychoeducation was compared with routine seizure clinic

follow-ups. Brief group psychoeducation was conducted over three months, and each of these were one-and-a-half-hour long. The primary outcome was psychosocial functioning as measured on the WSAS; improvement was seen for the intervention group but no significant improvement in seizure frequency was observed. Secondary outcomes included emergency room visits, developing new and disabling symptoms, and knowledge and perception of results of internal measure. For the intervention group, lesser emergency room visits and meaningful insights of internal measure were observed. There was no difference observed amongst the intervention and control group for developing new and disabling symptoms.<sup>7</sup>

## Motivational Interview (MI)

MI+psychotherapy was compared to psychotherapy only. MI was one session followed by psychotherapy, whereas psychotherapy was a manualized 12-session regimen. They found that compared to the psychotherapy-only group (31%), the MI+psychotherapy group adhered to therapy (65.4%); greater seizure frequency was observed for MI+psychotherapy group (76.2%) as compared psychotherapy-only group (34.8%); seizure freedom was also higher for the MI+psychotherapy group (30.8%) than the psychotherapy-only group (10.7%), and MI+psychotherapy group's quality of life was also higher.<sup>14</sup>

## Discussion

PNES symptoms significantly improve with psychotherapy. While before and after measures have been reviewed along with RCTs,<sup>2,8</sup> no study had reviewed only RCTs to mention the benefits and effectiveness of different psychotherapies for PNES. Further, while a before-and-after design may show that the treatment used is significant, bias can affect the determined results. As a result, RCTs are suggested as top research evidence for psychotherapies.<sup>15</sup> Adding on to these, reviews that looked at psychotherapeutic treatments for PNES had stressed the importance of suitable methodology, especially of controlled trials.<sup>1,2</sup> Hence, we aimed at understanding the impact of different psychotherapies by reviewing

RCTs conducted for PNES. Our results showed that there had been seven RCTs conducted between 2000 and 2020. Among these, four used CBT and the others used PI therapy, brief psychoeducational therapy, or MI. Further, it was observed that amongst the studies that used CBT, an added routine procedure or psychiatric medication along with CBT (CBT+SMC or CBT-IP+sertraline) yielded better results in both symptom reduction and psychosocial functioning, including quality of life and psychological distress.<sup>11,12,16</sup> Furthermore, CBT and BPT did not show any significant difference in either seizure reduction or psychosocial functioning.<sup>13</sup> This confirms the previous meta-analysis finding that psychotherapy, in general, can reduce PNES symptoms.<sup>8</sup> On the other hand, rather than only psychotherapy, MI+psychotherapy was more effective: added MI can reduce seizures twice than only psychotherapy.<sup>14</sup> Finally, psychoeducation does not affect the reduction of seizures but can improve psychosocial functioning.<sup>7</sup>

Although this review mentions the impact of different psychotherapies, it cannot point out a single psychotherapy that is more effective than the others. CBT is the only psychotherapy that has been conducted as a randomized trial more number of times and as a multicentric trial. Hence, obviously, it seems like a better choice, especially CBT+SMC, due to its outcomes. However, MI paired with psychotherapy also can reduce seizures significantly and improve psychosocial functioning. Other than the fact that it has not been evaluated in a multicentric trial, there is no other reason to conclude that MI with psychotherapy may be less effective than CBT+SMC.

## Conclusion

Improvement in seizures and psychosocial functioning in PNES is evident with the use of psychotherapy. However, prior MI seems to double the effects of outcomes than just psychotherapy. CBT proves to be effective, and the review shows that routine procedures such as SMC or medications such as sertraline paired with CBT have higher benefits than CBT alone. This implies that in treatment protocol, the clinicians should consider MI along with psychotherapy

rather than just psychotherapy. Similarly, for CBT, SMC or sertraline paired along with CBT should be considered. Further research should also explore multicentric randomized trials for MI+psychotherapy and cross-cultural studies.

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