



# Brief Psychoeducational and Cognitive Therapy for Nightmare Disorder (BPCT-ND)

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## Abstract

### Keywords

- ▶ sleepiness
- ▶ sleep initiation and maintenance disorders
- ▶ cognitive behavioral therapy
- ▶ REM sleep parasomnias

In adults, nightmare disorder is related to sleep deprivation, drug consumption or abuse, or other comorbid sleep disorders such as insomnia or insufficient sleep syndrome. Behavioral treatment has solid scientific evidence in disorders such as insomnia and, more recently, parasomnias. The aim of the present study was to investigate the clinical effectiveness of a Brief Behavioral Telemedicine Therapy in Nightmare Disorder in a 23-year-old female patient. The procedure consisted of the case study, with pre and posttreatment measures as well as follow-up after 1 month; and the Epworth Sleepiness Scale, Pittsburgh Sleep Quality Index, Paris Arousal Disorders Severity Scale, and a sleep diary were applied. In parallel with changes recorded in the sleep diary, a decrease in nightmares, sleepiness, and insomnia symptoms was observed when the intervention was finished. The behavioral intervention was clinically effective; therefore, the present case report provides information on behavioral treatments for nightmare disorder.

## Introduction

Sleep disorders are a public health problem. McArdle et al., in 2020,<sup>1</sup> mentioned that insomnia is the most prevalent sleep disorder (19.3%), followed by obstructive sleep apnea syndrome (OSAS) (14.9%), and parasomnias, with a lower incidence (13.8%). Sleep disorders are considered risk factors for metabolic and psychiatric diseases, traffic accidents<sup>2,3</sup> and mental health comorbidities, negatively impacting the quality of life.<sup>4</sup>

According to the International Classification of Sleep disorders (ICSD-3),<sup>5</sup> parasomnias mainly consist of undesirable physical events or experiences that occur during entry into

sleep, within sleep, or during arousal from sleep; and cause significant clinical discomfort with repercussions on daytime functioning.<sup>6</sup> Parasomnias are grouped according to the sleep phase during which they occur: a) non-rapid eye movement (NREM)-related parasomnias (confusional arousals, sleepwalking, sleep terrors, and sleep-related eating disorders), b) REM-related parasomnias (REM sleep behavior disorder, recurrent isolated sleep paralysis, and nightmare disorder), c) Other parasomnias (exploding head syndrome, sleep-related hallucinations, sleep enuresis, parasomnia due to a medical disorder, parasomnia due to a medical substance, parasomnia unspecified), and d) Isolated symptoms (sleep talking).

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Nightmare disorder (ND) is characterized by highly dysphoric dreams with negative and intense emotional content, such as fear or terror, anger, shame or sadness, and its etiology has been explained by a deterioration of fear extinction or by hyperarousal<sup>7</sup> that generates full awakenings and clear memories; these are more frequent during the second part of the night.<sup>8</sup> Nightmare disorder is not attributable to the physiological effects of any substance or other mental or medical disorder, and it negatively impacts the affected individual's quality of life and causes deterioration in social, work, family, or school situations<sup>5</sup>; however, the nightmares can be differentiated as idiopathic or posttraumatic.<sup>9</sup> The diagnosis is mainly clinical, achieved through a clinical interview considering physiological, dysfunctional cognitive, hereditary familial factors, and traumatic experiences in childhood.<sup>10</sup>

Pharmacological treatment can be employed to address ND, mainly using atypical antipsychotics such as olanzapine or risperidone.<sup>11</sup> Psychological interventions are also used, including behavioral and cognitive-behavioral techniques, such as exposure therapy (ET), relaxation techniques (RT), imagery rehearsal therapy (IET), dream rewriting, and lucid dreaming therapy.<sup>12</sup> However, evidence of the effects of these treatments is limited to case reports and a few pilot studies.<sup>13</sup>

Considering this background, the present case report describes the results of a brief psychoeducational and cognitive therapy for nightmare disorder (BPCT-ND) in a patient with ND with no comorbid psychiatric or neurological diagnoses according to the clinical history referred by the medical service.

## Case Report

H. is a 23-year-old woman, currently living with her mother. She is the youngest of three siblings and reports that she has a good relationship with her father, whom she visits on weekends. H. studied for a degree in social work, and, at the time of the intervention, she mentions that she had been unemployed due to the coronavirus disease 2019 (COVID-19) pandemic for 5 months. The frequency of her nightmares had increased during that period. In her personal medical history, she reported sleepwalking at the age of 3, with no history of trauma experiences, psychiatric illness, posttraumatic stress disorder (PTSD)-type recurrent nightmares or prescription drugs; and in relation to the family medical history,

she mentioned symptoms of chronic insomnia, restless legs syndrome (RSL), sleepwalking and OSAS.

The reason for consultation was the occurrence of nightmares. The patient reported an average of 6 nightmares a night (related to deaths of her relatives and pets; however, the dream content was always different), for 6 nights a week, multiple awakenings, and daytime fatigue; causing problems in job interviews. Due to recurring nightmares, H. has delayed her bedtime from 11:00 PM to 2:00 AM, and gets up at 8:00 AM, leading to daytime fatigue. After clinical interview, the clinical diagnosis of ND was reached according to the ICD-3; with symptoms of maintenance insomnia and poor sleep quality but without complete criteria for chronic insomnia.

## Methods

A case study was performed, with pre and posttreatment, as well as follow-up measures, at 1 month.<sup>14</sup> The evaluation consisted of a sleep diary and the Epworth Sleepiness Scale (ESS)<sup>15</sup>, Pittsburgh Sleep Quality Index (PSQI)<sup>16</sup>, and Paris Activation Disorders Severity Scale (PADSS)<sup>17</sup>, translated into Spanish. The BPCT-ND was composed of a) muscle relaxation (MR), b) imagery exposure (IE), c) Imagery Rehearsal Therapy (IRT), and d) sleep hygiene. The BPCT-ND was divided into 2 sessions for evaluation (pre and post), 3 tele-medicine sessions lasting 50 minutes each, and a 30-minute follow-up session once per month (see ►Table 1). The telemedicine sessions were performed using the video conference system of the National Autonomous University of Mexico, to ensure good technical quality and avoid hacking in the sessions.

## Results

►Table 2 shows scores of the sleep scales at each of the measurements. A decrease of nightmare symptoms was observed between the pre and posttreatment scores, with maintenance after 1 month of follow-up.

In the sleep diary (►Fig. 1), a decrease in the number of nightmare episodes per night was observed (only 1 night per week compared with an average of 6 nights per week before treatment). Consistent with this, there was an increase in quality and subjective sleep time, and an improvement in daytime fatigue after the first session, and these changes were maintained during the follow-up.

**Table 1** Session-by-session outline of the brief psychoeducational and cognitive therapy for nightmare disorder (BPCT-ND)

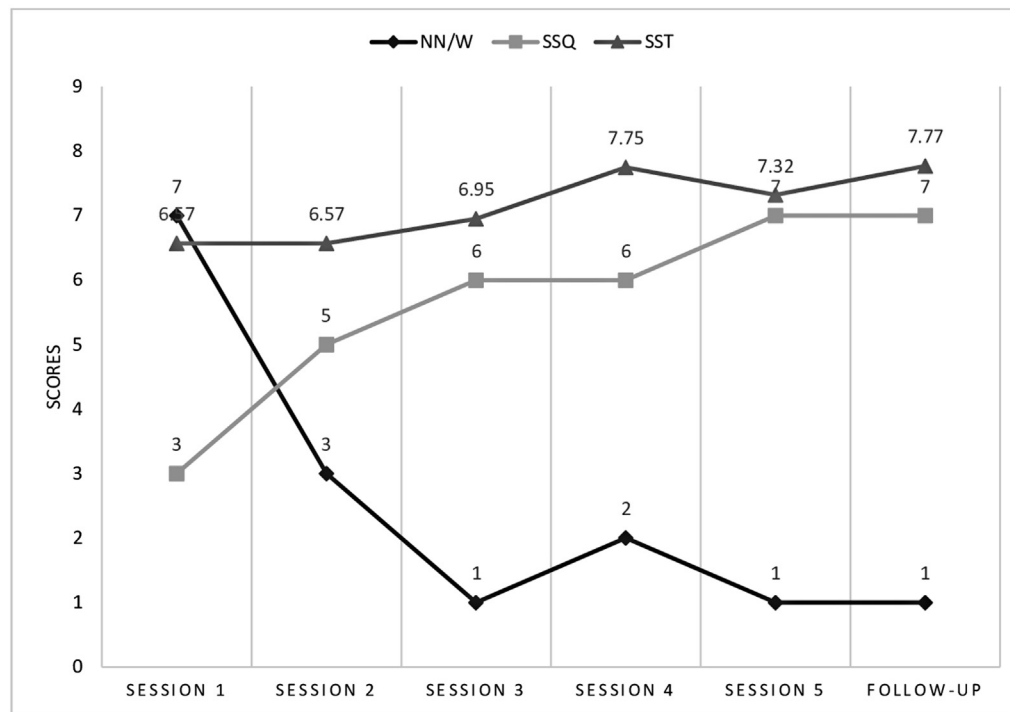
Session	Description
1	Clinical interview was performed, sleep scales were applied, instructions for filling out the sleep diary were given, and sleep hygiene measures were described.
2–4	In sessions 2 to 4, the sleep diary information for the previous week was collected, and MR, IE, and IRT were initiated.
5	The final data from the sleep scales and sleep diary were collected, concluding the intervention.
6	As a follow-up, the sleep scales and sleep diary were applied again.

Abbreviations: IE, imagery exposure; IRT, imagery rehearsal therapy; MR, muscle relaxation.

**Table 2** Sleep scales scores

Scale	Pretreatment	Posttreatment	Follow-up
ESS	10	5	5
PSQI	11	5	5
PADSS	11	8	8

Abbreviations: ESS, Epworth Sleepiness Scale; PSQI, Pittsburgh Sleep Quality Index; PADSS, Paris Arousal Disorders Severity Scale.



**Fig. 1** Sleep diary scores. Abbreviations: NN/W, number of nightmares per week; SSQ, subjective sleep quality; SST, subjective sleep time, sessions 1 to 5, and follow-up.

► **Fig. 2** shows subjective sleep efficiency, which increased considerably from the baseline (55%) to the 1st week of treatment (95%) and remained stable during treatment and follow-up.

## Discussion

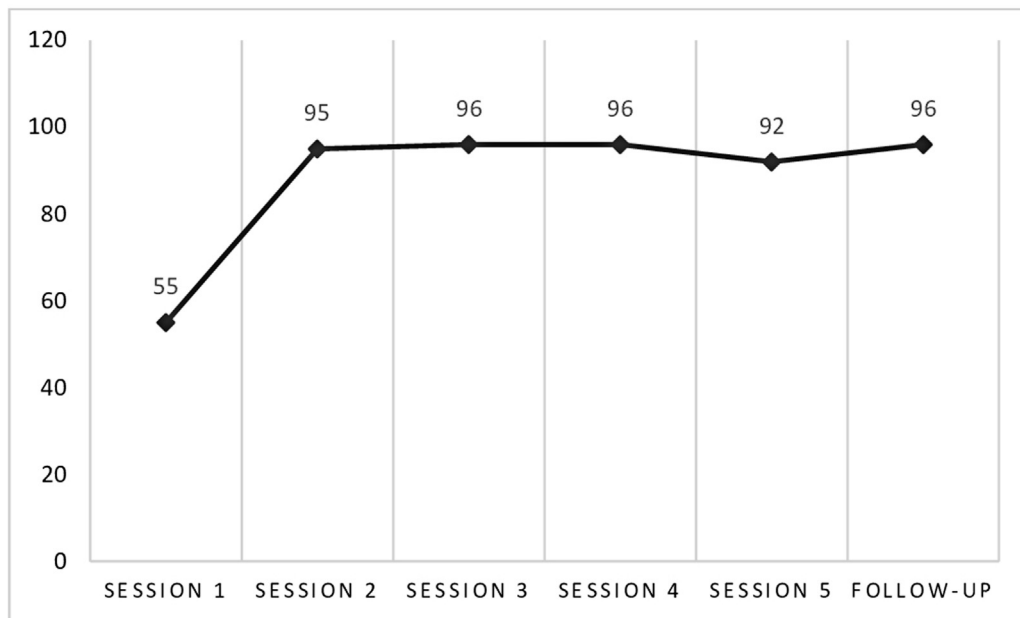
Based on the clinical results, we can conclude that the intervention was effective in reducing symptoms of ND, insomnia, and sleepiness (increased sleep time, quality, and efficiency, in addition to showing a decrease in the ESS and PSQI scores).

Different publications have mentioned that sleep deprivation due to a variety of causes (e.g., insufficient sleep syndrome, sleep apnea or shift work sleep disorder) is a provoking factor of parasomnias through a phenomenon known as REM sleep rebound.<sup>18</sup> Although, a polysomnographic record was not performed in this case report, and, therefore, there is no objective evidence of pretreatment sleep deprivation, it is possible that the posttreatment increase in subjective sleep time observed in the sleep diary

reversed the impaired sleep architecture that has been reported in patients with ND, such as reduced amount of slow-wave sleep, increased nocturnal awakenings, and longer durations of REM sleep,<sup>19</sup> which, in turn, controlled the ND.

In another sense, considering the limitations of pharmacological treatments for ND, low grade and sparse data, as well as the associated side effects<sup>11</sup> it is important to mention that behavioral treatment for ND should be considered as the first treatment option; however, more research is still needed on the effectiveness of this type of treatment with other designs, such as clinical trials. As an example, the effectiveness of a brief telephone intervention for ND has been demonstrated.<sup>20</sup>

The results of the current case report emphasize the importance of controlling the symptoms of poor sleep quality using behavioral techniques and sleep hygiene to reduce symptoms of nightmares; they also provide additional evidence of the effectiveness of telemedicine behavioral interventions in patients with symptoms of REM-sleep parasomnias.<sup>21</sup>



**Fig. 2** Subjective sleep efficiency. Note: Sessions 1 to 5, and follow-up.

## Conclusion

Brief behavioral therapy was effective in controlling ND as well as symptoms of insomnia and daytime sleepiness and fatigue.

### Ethics Statement

This case report was performed under the guidelines of the Research and Ethics Commissions of the Faculty of Medicine with registration number CONBIOETICA09-CEI0662014212. During the clinical interview, the patient was informed of the researcher's interest and signed an informed consent form. Once the intervention was finished, the patient read the manuscript and gave her signed consent for its publication.

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### Conflict of Interests

The authors have no conflict of interests to declare.

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