Clinical Hypnosis in Reducing Chronic Insomnia Accompanied by Rumination

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Abstract

The effect of chronic insomnia carries along a physical and psychological state of dysfunctionality felt by the individual. The purpose of the study was to investigate the effects of hypnotherapeutic intervention applied in the case of patients who present insomnia accompanied by rumination. We performed the study of 42 patients who underwent the Symptom Checklist-90 (SCL-90) for the psychiatric evaluation and the Pittsburgh Sleep Quality Index (PSQI) for sleep quality at baseline, 1 month after the program and follow-up (2 months) after finalizing the program. Our findings revealed that hypnotherapeutic intervention that involves relaxation and positive self-suggestion leads to positive results among the patient who experience insomnia accompanied by rumination.

Keywords

1. Introduction

Chronic insomnia is a common sleep disorder in clinics [1]. Insomnia can result in functional impairment as well as increase the risk of medical and neuropsychiatric conditions such as depression, anxious disorders, the bipolar affective disorder, panic attacks, substance abuse or other medical conditions.

There are many factors that affect insomnia. Predisposing, precipitating, and perpetuating factors play roles in the pathogenesis of insomnia. Previous research suggests chronic insomnia is closely linked to rumination. Rumination has been shown to increase engagement in depressed thinking [2], is related to negative emotions, and can prolong insomnia [3]. Rumination appears to be a relatively stable characteristic [4]. In insomnia, specific rumination is related to

both trait predisposition to arousal and to state-dependent arousal. As expected, high-trait ruminators experienced more pre-sleep intrusive thoughts and poorer sleep quality. The instruction to ruminate had a particularly detrimental effect on sleep quality. The perseverative cognitions that characterize rumination are thought to be under tonic inhibitory control by the prefrontal cortex [5]. In dealing with subjects with insomnia the use of rumination-oriented psychological strategies could be important.

Hypnosis is one of mind-body therapies for induction and maintenance of a heightened internal awareness state, and is associated with relaxation, elevated mood, reduced pain sensitivity as well as a lower heart and respiration rate. Hypnosis has been described in the clinical literature as a significant means for enhancing a sense of personal empowerment [6].

Using hypnosis as a support intervention in controlling rumination allows the patient to reach better control over insomnia [7]. The effects of hypnosis are evident in certain brain regions, particularly the frontolimbic attention system, which is associated with being able to shift focus from unpleasant stimuli to pleasurable or neutral emotions [8]. Hypnosis is a technique which is more and more taken in consideration in managing intrusive thoughts, with benefic results, as many studies have shown [9] [10] [11].

The objective of this study was the effect of hypnotherapeutic and relaxation interventions in patients with insomnia accompanied by rumination.

2. Method

2.1. Participants and Procedure

The subjects were recruited from outpatient units of the Fifth Affiliated Hospital of Sun Yat-Sen University, Zhuhai, Guangdong Province, China. The participants were patients with chronic insomnia who experienced insomnia three times in a week for six months in our department. Ethical written informed consent was obtained from all patients in accordance with protocols approved by the Clinical Research Ethics Committee of the Fifth Affiliated Hospital of Sun Yat-sen University.

A number of 42 patients were identified to correspond to the criteria in the study. These criteria were: The diagnosis of primary insomnia was established by clinical interview based on the DSM-IV criteria. All of the patients with chronic insomnia reported rumination and refused medical treatment. All subjects had never used hypnotics in the past.

The exclusion criteria for all subjects were as follows: 1) psychiatric diseases (psychosis, current depression, and anxious disorder) or psychosis that was clearly due to substance abuse; 2) a history of antipsychotic therapy or other medication; 3) other sleep disorders (e.g., obstructive sleep apnea, restless legs syndrome); 4) physical illnesses including hypertension, diabetes, or heart or respiratory diseases; 5) premenopausal or pregnant women.

The participants were divided into 2 groups: experimental group (EG) and

control group (CG) by random choice. The experimental group (N = 21) received hypnotherapeutic treatment. The control group (N = 21) received recommended half-hour jogging once a day. Table 1 presents the socio-demographic characteristics of two groups.

The patients were evaluated by the questionnaires on three times, before hypnosis intervention, 1 month after the program and follow-up (2 months) after finalizing the program.

The interventions were divided into two parts. The first part consists of hypnotherapy. In the relaxation condition, the participants were initially invited to make themselves comfortable through deep muscle relaxation and other forms of progressive relaxation strategies. In the hypnosis condition, a light hypnosis was induced through repetitive statements such as "you are going deeper and deeper into relaxation" or counting backward technique. The induction of hypnosis required 10 min before the first set of suggestions was made to disconnect pleasant experiences, such as socializing or holidays. Hypnosis was then deepened by repeating statements involving relaxation. Under hypnosis, the participants were given suggestions to learn to better compartmentalization (boundary) skills (e.g., to separate problem-solving time from sleep time), and switch their self-image from that of insomniacs to good sleepers. During this hypnotherapeutic program, the patients received positive post-hypnotic suggestions related to eliminating the rumination tendency and reducing insomnia. The intervention lasted for 60 min.

Second step of treating was homework assignments, including positive self-hypnosis and self-suggestion. The patients practiced these techniques during a month. In the part of the intervention, the participants practiced self-hypnosis regularly three times a day, and positive self-suggestion by writing repeatedly at least 50 times a day the statements such as "Every day, in every way, I'm getting better and better. Fall asleep fast, sleep well". This technique was used to reduce negative sleeping suggestion for ensuring sleeping attitude was in accordance with good sleep. The participants were debriefed about the study condition and given self-hypnosis to repeat the potential effects of the intervention as frequently as they desire. The therapeutic protocol was sustained by the participation of two psychotherapists specialized in applying hypnosis techniques.

2.2. Measures

All of the subjects underwent a clinical evaluation, including the Symptom Checklist-90 (SCL-90) for the psychiatric evaluation, the Pittsburgh Sleep Quality Index (PSQI) for sleep quality.

SCL-90 [12] is a self-administered inventory of psychiatric syndromes with the following subscales: Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, Psychoticism and Additional Scale. Additional Scale result shows eating and sleeping status of the patients. Obsessionality result shows a general assessment

Table 1. Sample demographics and the assessment measures used.

	EG (n = 21)	CG (n = 21)	p
Gender (male)	15 (71.4%)	12 (57.1%)	0.346
Age (sd)	35.05 (13.298)	33.38 (14.545)	0.700
Level of Education			
Elementary school	2 (9.5)	1 (4.8)	0.811
High school	7 (33.3)	10 (47.6)	
University	12 (57.1)	10 (47.6)	
Employment			
Full or part time	8 (38.1)	11 (52.4)	0.437
On sick leave or unemployed	12 (57.1%)	9 (42.9%)	
Retired or other	1 (4.8%)	1 (4.8%)	
Marital status			
Single	5 (23.8)	8 (38.1)	0.100
Married	16 (76.2)	13 (61.9)	
Duration of insomnia (months)	12	12	0.520
SCL-90			
Somatization-Pre	1.52 (0.46)	1.71 (0.62)	0.004
Somatization-Post	1.24 (0.21)	1.48 (0.45)	
Somatization-Follow-up	1.24 (0.23)	1.45 (0.45)	
Obsessive-Compulsive-Pre	2.00 (0.58)	2.08 (0.57)	<0.001
Obsessive-Compulsive-Post	1.56 (0.24)	1.94 (0.35)	
Obsessive-Compulsive-Follow-up	1.45 (0.29)	1.86 (0.28)	0.647
Interpersonal Sensitivity-Pre	1.61 (0.43)	1.65 (0.41)	
Interpersonal Sensitivity-Post	1.54 (0.36)	1.58 (0.40)	
Interpersonal Sensitivity-Follow-up	1.52 (0.32)	1.60 (0.39)	0.013
Depression-Pre	1.82 (0.58)	1.96 (0.65)	
Depression-Post	1.65 (0.43)	1.69 (0.45)	
Depression-Follow-up	1.74 (0.31)	1.60 (0.41)	0.010
Anxiety-Pre	1.78 (0.51)	1.90 (0.59)	
Anxiety-Post	1.60 (0.25)	1.68 (0.50)	
Anxiety-Follow-up	1.56 (0.23)	1.77 (0.45)	0.049
Hostility-Pre	1.42 (0.29)	1.46 (0.43)	
Hostility-Post	1.30 (0.26)	1.38 (0.33)	
Hostility-Follow-up	1.41 (0.33)	1.42 (0.37)	0.113
Phobic Anxiety-Pre	1.43 (0.44)	1.57 (0.62)	
Phobic Anxiety-Post	1.31 (0.19)	1.43 (0.47)	
Phobic Anxiety-Follow-up	1.29 (0.22)	1.49 (0.47)	
Paranoid Ideation-Pre	1.59 (0.53)	1.45 (0.47)	0.068
Paranoid Ideation-Post	1.47 (0.30)	1.39 (0.40)	
Paranoid Ideation-Follow-up	1.46 (0.36)	1.40 (0.38)	0.010
Psychoticism-Pre	1.68 (0.39)	1.66 (0.41)	
Psychoticism-Post	1.53 (0.42)	1.57 (0.31)	
Psychoticism-Follow-up	1.49 (0.29)	1.53 (0.31)	<0.001*
Additional Scale-Pre	2.34 (0.34)	2.29 (0.35)	
Additional Scale-Post	1.87 (0.24)	2.11 (0.31)	
Additional Scale-Follow-up	1.71 (0.32)	2.00 (0.31)	

Continued

PSQI			
Global-Pre	12.47 (2.04)	12.66 (1.90)	<0.001*
Global-Post	9.09 (2.21)	11.71 (2.21)	
Global-Follow-up	7.90 (2.04)	11.09 (1.81)	
Subjective Sleep Quality-Pre	2.47 (0.51)	2.57 (0.51)	<0.001*
Subjective Sleep Quality-Post	1.71 (0.56)	2.33 (0.57)	
Subjective Sleep Quality-Follow-up	1.47 (0.51)	2.14 (0.47)	
Sleep Latency-Pre	2.38 (0.49)	2.33 (0.48)	<0.001*
Sleep Latency-Post	1.81 (0.51)	2.19 (0.51)	
Sleep Latency-Follow-up	1.66 (0.48)	2.14 (0.47)	
Sleep Duration-Pre	2.38 (0.49)	2.23 (0.43)	<0.001*
Sleep Duration-Post	1.76 (0.54)	2.14 (0.47)	
Sleep Duration-Follow-up	1.66 (0.48)	2.09 (0.43)	
Sleep Efficiency-Pre	2.38 (0.49)	2.28 (0.46)	<0.001*
Sleep Efficiency-Post	1.80 (0.68)	2.19 (0.40)	
Sleep Efficiency-Follow-up	1.42 (0.51)	2.04 (0.22)	
Sleep Disturbances-Pre	0.57 (0.81)	0.76 (0.77)	0.018
Sleep Disturbances-Post	0.28 (0.56)	0.66 (0.73)	
Sleep Disturbances-Follow-up	0.23 (0.54)	0.66 (0.73)	
Daytime Dysfunction-Pre	2.28 (0.46	2.47 (0.51)	<0.001
Daytime Dysfunction-Post	1.62 (0.67)	2.14 (0.57)	
Daytime Dysfunction-Follow-up	1.42 (0.59)	2.00 (0.45)	

Note: Significance tests for continuous variables performed with t-test, otherwise Chi-2 is used. Quantitative variables from pre-post-treatment were examined using the repeated measures analysis of variance (ANOVA). *p < 0.05 (time*group).

of rumination. SCL-90 is an internationally recognized general psychopathological scale, better suited for the study of common psychiatric syndromes. Patients were instructed to indicate the amount they were bothered by each of the distress symptoms during the preceding week. Patients rated 90 distress symptoms on a 5-point Likert scale with 0 being "not at all" and 4 being "extremely." Total scores can range from 0 to 360. The statements are assigned to 8 dimensions reflecting various types of psychopathology: anxiety, agoraphobia, depression, somatization, insufficiency, sensitivity, hostility, and insomnia.

PSQI [13] is a well-validated and commonly used instrument for sleep quality assessment. The global scores (value range: 0 - 21 points) were calculated by its seven domains reported by patients, including subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, and daytime dysfunction. Higher scores indicated poorer sleep quality. Here, all subjects in our study had never used hypnotics in the past and refused medical treatment, therefore we deleted the domain "use of sleep medications".

All statistical analyses were conducted with Statistical Program for the Social Sciences (SPSS) software (version 22.0, Chicago, IL, USA). Continuous variables were described by measures of central tendency (mean) and dispersion (standard deviation), and duration of insomnia was described by measure of median. In two groups, age was examined using the *t*-test. The X^2 test was used for categorical variables between groups. Quantitative variables from pre-post-treatment were examined using the repeated measures analysis of variance (ANOVA). The

statistical significance was set at p < 0.05.

3. Results

The socio-demographic characteristics of the individuals and the assessment measures used are presented in Table 1.

The two groups were very similar with regard to gender, age, level of education, employment, marital status, and duration of complaints (see Table 1). The pre Scl-90 and PSQI scores in EG were compared to the pre Scl-90 and PSQI scores in CG. The statistical data revealed the two groups were very similar with regard to the pre Scl-90 and PSQI scores (p > 0.05). There were no significant differences of primary information between two groups.

As represented in Table 1, According to the ANOVA repeated measures variance evaluation, the results showed that the hypnotherapeutic intervention that involves relaxation and positive self-suggestion, evaluated in the three phases of the study has a significant effect on the levels of somatization, obsessive-compulsive, depression, anxiety, hostility, psychoticism and additional scale (p < 0.05). Similarly, the ANOVA repeated measures variance showed that the hypnotherapeutic intervention that involves relaxation and positive self-suggestion, evaluated in the three phases of the study has a significant effect on the levels of seven domains of PSQI, including subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbances, and daytime dysfunction (p < 0.05).

The MANOVA showed a significant treatment time × group interaction, as well as time main effects for Additional Scale of SCL-90, Global PSQI, Subjective Sleep Quality, Sleep Latency, Sleep Duration and Sleep Efficiency (P < 0.05).

4. Discussion

According to the scores of scl-90, the scores of two subscales ≥ 2, such as obsessive-compulsive and additional scale, show clinical pathological significance. Here, obsessive-compulsive result may show a general assessment of rumination, and additional scale result may show sleeping status of the patients. After hypnosis treatment, analysis of variance revealed significant differences in symptoms of obsessive-compulsive and additional scale. Analyzing the results, we noticed an improvement in reducing the level for rumination in experimental group where hypnosis was applied. After hypnosis treatment, the decrease of subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbances, and daytime dysfunction has been statistically significant compared to the results obtained in the control group. Meanwhile, improvements in psychiatric syndromes, such as depression, anxiety, hostility, psychoticism were also observed.

In this study, we found clinical hypnosis has been an effective intervention in sleep quality in the case of patients presenting insomnia accompanied by rumination. The worthwhile goal in treatment is to address the individual's ruminative coping style. Here, we help the patients to learn to establish better boundaries between their work and sleep, and separate problem solving time from sleep

time. Such skills can be useful for controlling their ruminations to help the person overcome insomnia. Hypnosis has been described in the clinical literature as a significant means for teaching such skills [14] [15].

An important aspect of hypnotherapy is teaching self-hypnosis. Thus, patients can practice hypnosis as frequently as they choose. A technique that can be taught during positive post-hypnotic suggestion is the use of a "relaxation sign," such as deep breathing. The strategy may help individuals to fall asleep more quickly. After doing this patients can provide their own set of suggestions, which can further ameliorate symptoms. Thus, the therapist arms patients with a tool that can be used outside of scheduled encounters with the patients.

The treatment in this study used positive self-suggestion may reduce negative sleeping suggestion for ensuring sleeping attitude was in accordance with good sleep. Suggestions can improve self-confidence by helping patients to develop a positive internal dialogue. Hypnosis can help them to explore the connections between their own mind and bodies. Finally, it will be useful to perform longitudinal studies to evaluate the effect of hypnotherapeutic intervention in an extended interval of follow-up.

5. Conclusion

In conclusion, our results support the fact that hypnosis and positive self-suggestion techniques may be effective and safe for patients with chronic insomnia who report rumination and have refused sleep medications. However, considering the limitation of the lack of representativeness of our sample implied by the low number of participants, we recommend further research on this topic.

Acknowledgements

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