

EFFECT OF COGNITIVE BEHAVIORAL THERAPY WITH PHYSIOTHERAPY ON SUBJECTS WITH INSOMNIA

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Abstract: Background and objectives: Efforts at improving the quality of life in individuals with insomnia have been a concern for researchers in the past decades. This study determined the effect of cognitive behavioural therapy and physiotherapy on patients suffering from insomnia.

Methods: This study involved 20 participants clinically diagnosed with insomnia. They underwent cognitive behavioural therapy and physiotherapy for six weeks. Insomnia is assessed using the insomnia severity index and the data is analysed using an independent paired t test.

Results: Participants were aged 21 – 30 years. There is a significant improvement in each of the symptoms of insomnia. Before the intervention, 91.3% had insomnia and 4.3% each of subthreshold and moderate insomnia respectively while at six weeks, 95.7% had no insomnia and 4.3% had sub-threshold insomnia. All participants were poor at ISI rating before intervention while at six weeks, 82.6% rated their effectiveness as good and 17.4% rated it fair.

Conclusion: Cognitive behavioural therapy and physiotherapy significantly reduce the severity of insomnia and fatigue, and improve the quality of life and functional performance of individuals with insomnia.

Keywords: Insomnia, cognitive behavioural therapy, physiotherapy, insomnia severity index scale.

1. INTRODUCTION

The most frequent sleep issue is insomnia. Even when you have the chance to sleep through the night, it happens when you have trouble keeping asleep or falling asleep. Insomnia has a variety of causes, symptoms, and degrees of severity. Insomnia might entail issues with sleeping. Having trouble remaining asleep all through the night and getting up too early¹.

Insomnia is frequently categorised depending on its symptoms, length, or ostensible cause. The particular kind of sleep complaint frequently changes over time within a person, and the majority of patients report experiencing more than one form of sleep disruption, making symptom-based categorization of little utility. Given the high rate of chronicity and

recurrence in insomnia, other types of classifications, duration-based classifications, such as transient (several days), short-term (up to 3 weeks), and long-term insomnia, repeated brief and continued insomnia, have received little validation and are of questionable value.² While persistent insomnia is more frequently linked to an internal sleep disturbance or primary insomnia, transient and short-term insomnia is frequently associated with certain psychosocial or environmental factors. The International Categorization of Diseases is one such classification system. Sleep problems have important consequences. Insufficient sleep the night before has been linked to worse cognitive function the following day. Insufficient sleep at night is associated with a higher mortality risk than sound sleepers. Sleep problems are frequently related to emotional disturbances. A great quality of life depends on getting a decent night's sleep.³

Chronic insomnia is a major sleep disorder that affects millions of people worldwide and is linked to decreased quality of life, a higher chance of developing serious mental conditions, and greater healthcare use. Insomnia can appear as a main sleep disorder, a problem that coexists with another sleep, medical, or psychiatric disease, or a mix of these, or it can present thirdly.⁴

Although both Primary Insomnia (PI) and Comorbid Insomnia (CMI) are very frequent disorders, CMI is more common than PI in both clinical settings and the general population. In addition, CMI could be more chronic and result in even worse outcomes than PI. Recent research, for instance, demonstrates that those who experience chronic sleeplessness also report having concomitant gastrointestinal issues, chronic discomfort, hypertension, or issues breathing or urinating. Additionally, when insomnia coexists with a mental condition like severe depression, it makes treatment more difficult and frequently persists as a persistent symptom that raises the risk of relapse and suicide. These factors make patients who come with insomnia, and those with CMI in particular, deserving of prompt and efficient care.⁵

Cognitive Behavioural Therapy (CBT) is developed by Aaron Beck in 1960. CBT-I (Cognitive-Behavioral Therapy for Insomnia) shows beneficial benefits for insomnia and several sleep-related variables (van Straten et al., 2018). CBT-I is a regimen that targets both cognitive and behavioural aspects of the disease to enhance the participant's sleep (Edinger and Means, 2005). The non-pharmacological therapy method known as CBT-I consists of several techniques. Targeting variables including dysregulation of sleep drive, anxiety linked to sleep, and behaviours that interfere with sleep are the major objectives of CBT-I. CBT-I combined with structured physical therapy provides intense care for patients with insomnia.⁶ The five components of CBT-I include exercises mixed with relaxation methods, psychosocial components, and other physical therapy approaches as possible benefits. Chronic injuries of any one system do not impair alertness, although sleep and circadian rhythms are each a region and neurotransmitter that support awake. This implies a redundant system in which the other systems may fill up for the lost neurotransmitter. Insomnia is more common in those over the age of 60, and this is caused by several different circumstances. The most prevalent sleep problems in today's generation are insomnia and other forms of insomnia.⁷

Insomnia is defined as having clinically significant trouble falling asleep, remaining asleep, or waking up early at least three evenings per week for more than three months. A diagnosis of insomnia is made for almost 10% of teenagers in the general population, while approximately 33% say they have "at least some" symptoms of insomnia. (2012) Donnt et al. Chronic insomnia is a serious health issue that places a heavy load on sufferers and is very stable over time. The most cause-effective health intervention for insomniacs would be CBT-I coupled with physical therapy since it improves both the quality and quantity of sleep. A popular insomnia treatment is cognitive behavioural therapy (CBT-I), which aims to address attitudes and behaviours that interfere with sleep. Short-term sleep improvements are brought on by CBT-I. Additionally, improvements in sleep quality following CBT-I seem to last long after therapy is over.⁸

2. METHODOLOGY

Twenty subjects were participated from the Nandha medical college and hospital have also received consent form from the participants. The participants came from various occupational backgrounds and complaints about similar insomnia. There were in the age group of 21-30 years. Both males and females and Normal subjects with insomnia diagnosed using an insomnia sleep questionnaire were included and Uncooperative subjects, Systemic illness and Geriatric subjects were excluded. Before and after treatment patient were assessed by Insomnia severity index scale. The procedure consists of sessions with the therapist once or twice a week for 6 weeks to 3 months lasting for 5 to 20 sessions. Each session lasts for 30 to 60 minutes. CBT-I consists of 5 core components: sleep consolidation, stimulus control, cognitive structuring, sleep hygiene, and relaxation techniques. CBT-I consists of elements of treatments of sleep hygiene, stimulus control, sleep restriction, relaxation, and cognitive therapy.

Sleep Hygiene:

Sleep hygiene is explained to the patients through some demo or audiovisuals about diet and nutrition, food, explaining about the avoidance of drinks containing caffeine such as coffee or tea, sleep facts, sleep efficiency, lifestyle, bedroom factors, gender, thinking styles, feelings, mood, daytime energy, exercising before, use of mobile phones, other sleep disturbances.

Sleep scheduling:

This session includes stimulus control, sleep restriction, and cognitive therapy.

Stimulus control:

This set of instructions addresses conditioned arousal. Establish a regular morning rise time, This will strengthen the circadian clock regulating sleep and wakefulness. Ideally, the bedtime should also be regular which is difficult initially but can be progressed in the later periods. Go to bed only when sleepy, This will increase the probability that you will fall asleep quickly as fatigue is different from sleepiness. If unable to fall asleep, either at the beginning or in the middle of the night, get out of bed and return to bed only when sleepy again. Avoid excessive napping during the day. A brief nap (15 to 30 minutes), taken approximately 7 to 9 hours after rise time, can be refreshing and is not likely to disturb nocturnal sleep.

Sleep Restriction Therapy:

Sleep Restriction Therapy (SRT) is an insomnia treatment that aims to improve a person's sleep quality by limiting the time they spend in bed. The idea is that by limiting the time they spend awake in bed, a person can shorten the time it takes for them to fall asleep and improve their overall quality of sleep. This approach helps to Building a homeostatic sleep drive , Resetting the circadian rhythm, Decreasing body and cognitive arousal,

Reduces negative thinking patterns Procedure:

Step 1: Identify average total sleep time using a sleep diary

Step 2: Determine the sleep window

Step 3: Set a waking-up time

Step 4: Set a bedtime

Step 5: Stick to the schedule for 2 weeks

Step 6: Calculate the average efficiency score

Step 7: Adjust the sleep window Cognitive Thinking:

The cognitive part of CBT-I teaches you to recognize and change the belief that affects your ability to sleep. This type of therapy helps you control or eliminate negative thoughts and worries that keep you awake.

Relaxation techniques:

Relaxation techniques are important for a good night's sleep. Those techniques include: Sit down in a comfortable position and relax, Deep breathing exercises, Massage, Music or art therapy Make your bedroom

PHYSIOTHERAPY TECHNIQUES FOR INSOMNIA:

Start with stretching and mild walking to warm up the body , The exercise phase includes aerobic exercises such as jogging, stair climbing, swimming, etc., anaerobic such as weight training, and closed kinematics. Complete the stretching session and end it with slow walking or swim laps. Cardio workout helps in improving metabolism throughout the day and weight training increases tension in the muscles which promotes sleepiness and the drive to sleep naturally. The exercises performed also release endorphins (make you feel good) and put you in a better mood. Total treatment duration: 6 weeks to 3 months , Exercises 3 times/ week One session, Exercise period -Morning or early evening, Warm-upphase -5 minutes, Exercises hase -20 minutes

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All these exercises are demonstrated to the subjects individually under the therapist's guidance. Following interventions are taught the patient and home programmes. And the patients are regularly monitored to know the accuracy of results. This research is approved by the institutional ethical committee from the Nandha Medical College and Hospital, Erode, Tamilnadu, India before measurements began.

STATISTICAL ANALYSIS

The data were evaluated by using paired t test.

Data Presentation

Data values	Insomnia severity index scale	
Mean difference	8.85	
Standard deviation	Pretest-1.26	Posttest-0.875
The paired 't' test	26.39	
Table value	2.15	

3. RESULTS

The study sample comprises 20 patients. All the subjects underwent an insomnia sleep questionnaire and were treated with CBT-I with physiotherapy. The pre and post-test values were assessed by the insomnia severity index scale. The mean difference value is 8.85. The standard deviation of the pre-test value and post-test are 1.26 and 0.875 respectively. The paired 't' test value is 26.39. The pre and post-tests show a significant difference.

4. DISCUSSION

This study is conducted on 20 subjects who have undergone some inclusion and exclusion criteria. The present study is done to find out the efficiency of CBT-I combined with structured physical therapy provides intense care for patients with insomnia.

CBT-I consists of five components including psychosocial elements and exercises combined with relaxation techniques and other physical therapy techniques as several potential advantages. Sleep and Circadian Rhythms are each region and neurotransmitter that contributes to the promotion of wakefulness, but chronic lesions of any one system do not disrupt wakefulness. This suggests a redundant system, wherein the absence of one neurotransmitter may be compensated by the other systems.⁹ The negative impact of insomnia on both the quality of life and functional performance of the participants shows that when there is sleeplessness, the quality of life of an individual will deteriorate and subsequent reduction in functional performance. This can be attributed to the fact that when an individual did not sleep adequately the night before, he or she will be tired the morning after and this may result in reduced functional performance and quality of life. This corroborates the previous study that sleeplessness hurts functional performance and predisposes individuals to the development of psychiatric disorders. The most frequent sleep complaints among the participants in this study were restless sleep, low concentration, low back pain, leg cramps, and frightening dreams. This shows that efforts should be increasingly directed towards the reduction of insomnia and causes of insomnia among Indiansto live a healthy lifestyle.¹⁰

The positive effect of Cognitive behavioural therapy on the amelioration of the severity of insomnia in the participants in this study shows that exercise is effective in the management of inorganic insomnia and it is a complementary non-pharmacological modality in the management of psychiatry disorder.¹¹ A previous study had established that exercisesignificantly reduced the severity of insomnia. The improvement in the quality of life and functional performance of the participants in this study can be attributed to an improvement in the severity of insomnia. This shows that when the sleep pattern and habit of an individual improves, there will be an improvement in quality of life and he or she will be able to function at an optimal level. This agrees with a previous study that concludes that exercise has a positive impact on physiological mechanisms resulting in improved physical activity, quality of life, and functional performance in individuals diagnosed with insomnia.¹²

In India, the workforce with an ever-increasing proportion of people working late to meet targets in their place of employment causing insomnia leading to low performance due to mental overuse, the potential impact of occupational functional performance in individuals diagnosed with insomnia outcome is a legitimate concern. This is especially so since

the risk of morbidity could be increased by fatigue.¹³ Therefore, physiotherapist should increase their societal relevance by embarking on activities that prevent insomnia and its complications in India. Although this study is not specifically set to find the effect of exercises on body composition and cardiovascular system, it is observed that exercise significantly reduces the body adiposity and cardiovascular system.¹⁴ This shows that exercise is an effective way of managing overweight/obesity as well as treating mild to moderate hypertension. The normalization of the sleep pattern of the participants can be attributed to reduced body adiposity and normalization of the body's blood pressure. It is not uncommon that if an individual has not been sleeping well, there is the likelihood of an increase in the blood pressure parameters of the individual. Thus according to the pre and post-test values, it is concluded that CBT-I with physiotherapy was found effective in insomniacs.¹⁵

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