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## Management of Insomnia - A Tailored Behavioural Approach

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### Abstract

The feasibility and efficacy of using individualized behavioural package programmes in the management of insomnia was studied. The cases having an organic basis and those in which insomnia could have been secondary to another psychiatric diagnosis were not included. Five individuals went through a phase of seven days - baseline assessment in which Sleep disturbance Questionnaire, Arousal Predisposition scale and Sleep Diary were also gathered and Behavioural Analysis was done. Pre Intervention-data were used in tailoring of techniques to cases. In the therapeutic intervention phase of three weeks, the techniques used in varying combinations were Jacobson's Progressive Muscular Relaxation, Stimulus Control, Thought Stop, Cognitive Restructuring and Paradoxical Intention. The measures used in pre assessment were repeated in the post assessment phase of seven days. Improvements were noted in terms of statistical and clinical significance on such indices as sleep onset latency, length and number of awakenings, number of hours of sleep and quality of sleep.

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### Key words -

**Persistent psychophysiological insomnia,  
Behavioural Intervention**

Insomnia has been described as one of the most common disturbances associated with sleep. In the nosology of sleep. In the nosology of sleep and arousal disorders, the diagnostic category of Persistent Psychophysiological Insomnia (PPI) describes an entity which is maintained by two mutually reinforcing factors like chronic somatized tension discharged along physiological channels, and internal reinforcers of sleeplessness in terms of fear of being unable to fall asleep leading to physiological arousal and external conditional reinforcers of arousal such as sleep environment/sleep-rituals [1].

The three major hypothesis related to the development of insomnia with a learnt behavioural component are those emphasizing physiological over arousal [2] cognitive over arousal and poor stimulus control/sleep-schedules [3].

These three hypotheses provide the rationale for the use of such techniques of behavioral interventions as relaxation training, manipulation of attributions, cognitive restructuring, paradoxical-intention and stimulus-control strategies [4], [5], [6].

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## Aim and Objective

The present study was an attempt to assess the efficacy of tailored behavioural interventions in the management of the insomnia.

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## Sample, Materials and Procedure

The five individuals constituting the sample, with an age range 26 to 45 yrs (Mean age: 35.2 years) were graduates, from the middle income socioeconomic status background and the duration of insomnia ranged from 1 month to 1 year (the average duration being 7.4 months). The frequency of the complaint was on the average 2-3 nights per week in the past one month and either the average sleep-onset latency was 30 minutes or more, duration of intermittent awakening was 30 minutes or more, and there was a reduction in the average number of hours slept (which was causing distress) as compared to an established pattern over the past 6 months. The sleep disturbance was not secondary to physical illness/pain/substance abuse or withdrawal and the psychiatric problems were not severe enough to warrant a psychiatric diagnosis to which insomnia could have been secondary and the subject were not under medication for sleep-disturbance, were not undergoing meditation/Yoga and other such programmes.

After the preliminary screening, a baseline assessment (duration: one week) was done using the Behaviour-Analysis-Proforma, Sleep Diary, Visual Analogue [7] Sleep Disturbance Questionnaire [8], Arousal Predisposition Scale [9] and Pre sleep Arousal Scale [10].

The intervention techniques that were chosen to be used singly/in combination as governed by the baseline data were: Jacobson's progressive muscular relaxation, thought stop technique, cognitive-restructuring, paradoxical intention and stimulus control-technique. Therapeutic intervention and continuous assessment on sleep-diary and visual-analogue-scale were done for a period of 3 weeks for each individual. An averaging of the data from the 8th to the 14th day constituted the mid-assessment. After 3 weeks, all the tools initially used were readministered and post-assessment was done for a period of one week.

A comparison between pre and post assessment data was made. For evaluation of improvement with regard to the number of hours slept, the individual's established, usual pattern and the subjective distress were taken into account; for sleep-onset-latency, the normal pattern was established as less than 30 minute taken to fall asleep after lying in bed [11] and the clinically significant change was defined in terms of 50% or more of improvement over the baseline on one or more of the indices used.

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## Results

As per Table I, responses on Sleep Disturbance Questionnaire and Pre Sleep arousal scale were more amenable to change with therapeutic intervention as compared to the Arousal Predisposition Scale.

*Table I - Pre and post measures on inventories*

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Table II shows improvements in terms of clinical significance (50% or more of improvement over the baseline) on various indices of sleep. In this context, it is to be noticed that Haynes et al [12] reported that a placebo control group showed 26% reduction in sleep-onset-latencies which was significantly less than the improvement shown in the progressive relaxation group whereas in Bootzin's study [13], on several chronic insomniacs, random assignment to techniques resulted in 57%, 29%, 27% and 22% improvement in stimulus control, relaxation-training, self relaxation and no-treatment groups respectively. In relaxation technique when used in combination with other techniques as required in individual cases resulted in 50% or more of improvement over the baseline in the present study.

*Table II - Pre and post assessment measures on various sleep-indices*

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CS : An improvement of 50% or more over the baseline on varying measures and reduction in subjective distress was defined as clinically significant except for the number of hours of sleep for which the clinical significance was determined taking into account the usual established pattern before the onset of insomnia and the reduction of subjective distress.

The insomniacs tended to show a high level of psychopathology as a group, on behavioural analysis, in the form of anxiety, sadness, worrisome ruminations although these did not reach upto a level to warrant a separate diagnosis, in the cases studied.

The dramatic improvements occasionally noticed in the very initial phases of intervention, before the techniques could have been learnt by the subject, were transient and the role of expectancy effects therein could not be negated.

Sleep initiating problems appeared to be more easily susceptible to change as compared to intermittent and terminal insomnia in that order.

The case which did not register a clinically significant change, except on the index of quality of sleep, had the highest age of onset and the longest duration of insomnia, mostly terminal in nature as compared to others in the study and a poor compliance to relaxation-strategy was noticed.

While using paradoxical intention technique, wide-fluctuations were noted and it is speculated that at times, the instructions might have led to active efforts to remain awake as reported by Espie and Lindsay [14].

The gains made were maintained over a period of one to three months in the cases for which follow-up was possible.

The most common combination of techniques as a behavioural package programme that were found useful in the present sample consisted of Jacobson's programme muscular relaxation, stimulus control strategies and cognitive-restructuring.

On the whole, the results point towards the feasibility and effectiveness of a tailored approach to the behavioural management of insomnia of a mild to moderate degree of severity.

The use of a large sample to arrive at more valid generalizations, more sophisticated ways of assessing sleep-onset-latency to minimize bias, longer follow-ups to indicate the need for booster treatment sessions, assessment of personality-variables to clarify regarding compliance and responsiveness to therapy and the use of a more sophisticated design so as to reveal whether tailoring of treatments to cases is more effective than random assignment to treatment groups would enhance understanding in this area.

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