

Treatment Epidemiology

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For many insomnia sufferers, normal sleep-wake functioning becomes chronically disrupted through the development of poor sleep habits and conditioned emotional responses that either interfere with biological sleep-wake mechanisms or serve as inhibitors to sleep.¹ For example, daytime napping or spending extra time in bed in pursuit of elusive, unpredictable sleep may interfere with normal homeostatic sleep-controlling mechanisms and serve to reduce sleep drive on the ensuing night. Alternately, the habit of remaining in bed well beyond the normal rising time following a poor night's sleep may disrupt the circadian sleep-wake rhythm and make the subsequent night's sleep more difficult. The repeated association of the bed with unsuccessful sleep attempts, likewise, may result in a conditioned arousal in the home sleeping environment. Finally, failure to discontinue mentally demanding work and allot sufficient wind-down time before bed may make subsequent sleep initiation very difficult. Since any of these factors may contribute to and perpetuate sleep difficulty, behavioral/psychological interventions to correct these anomalies are often required to eradicate the chronic sleep difficulty.

Various relaxation training techniques, including progressive muscle relaxation training, autogenic training, imagery training, biofeedback, and hypnosis, have all been used to treat insomnia.^{2,3} Regardless of the specific relaxation strategy employed, such treatment entails teaching the insomnia sufferer a formal exercise or set of exercises designed to reduce anxiety and arousal at bedtime so that sleep initiation is facilitated. Typically, multiple treatment sessions are required to teach relaxation skills that the patient is encouraged to practice at home in order to gain mastery of self-relaxation. The goal of all such treatments is that of assisting the insomnia sufferer in achieving sufficient relaxation skills so that insomnia resulting from sleep-related performance anxiety and bedtime arousal can be minimized.

Stimulus control therapy, an approach introduced by Bootzin,⁴ is another treatment that has been used widely for insomnia management. This therapy is based on the assumption that both the timing (bedtime) and setting (bed/bedroom) associated with repeated unsuccessful sleep attempts over time become conditioned cues that perpetuate insomnia. In practice, stimulus control requires instructing the insomnia sufferer to: (1) go to bed only when sleepy; (2) establish a standard wake-up time; (3) get out of bed whenever awake for more than 15–20 minutes; (4) avoid reading, watching TV, eating, worrying, and other sleep-incompatible behaviors in the bed and bedroom; and (5) refrain from daytime napping. From

a theoretical perspective, it is probable that strict adherence to this regimen not only corrects aberrant, sleep-disruptive conditioning, but it also likely reestablishes a normal sleep drive and sleep-wake rhythm.

Sleep restriction therapy entails limiting/restricting the time allotted for sleep each night so that the time spent in bed closely matches the individual's actual sleep requirement. The treatment, introduced by Spielman et al.,⁵ grew out of the observation that many insomnia sufferers spend excessive time in bed each night in efforts to obtain their elusive sleep. Indeed, many such patients may experience excessive time awake each night simply because they are allotting far too much time for sleep. Typically, this treatment begins by having the patient maintain a sleep log on which a record of each night's sleep is kept. After the patient has kept a sleep log for 2–3 weeks, the average total sleep time (ATST) is calculated from the information recorded. An initial time-in-bed prescription then may be set at the ATST or at a value only slightly higher than the ATST. Subsequently the time-in-bed prescription is adjusted up or down in small increments until a consolidated and restorative sleep pattern is established.

An alternate form of insomnia therapy, paradoxical intention,⁶ relies on a form of reverse psychology to address sleep difficulties. Designed mainly to address sleep disruptive performance anxiety and exaggerated efforts to sleep, this treatment instructs the insomnia sufferer to remain awake as long as possible after retiring to bed. In essence, the patient is placed in the paradoxical position of having to perform the activity of not sleeping when in bed. If the individual acquiesces and genuinely tries to remain awake in bed, performance anxiety over not sleeping is alleviated and sleep becomes less difficult to initiate.

Although seldom used in isolation, generic sleep hygiene⁷ recommendations that target lifestyle and environmental conditions conducive to sleep are often provided in conjunction with other behavioral insomnia interventions. Most commonly, these recommendations encourage regular exercise; elimination of caffeine, alcohol, and nicotine; consumption of a light snack at bedtime; and sleeping in a quiet, dark, and comfortable bedroom.

Cognitive therapy, an approach that alters dysfunctional cognitions contributing to sleep difficulties, has also been used to address insomnia complaints. When applied specifically to insomnia patients, cognitive therapy targets unrealistic expectations about sleep as well as misconceptions or misattributions regarding the causes of insomnia, the consequences of insomnia, the ability to control and predict sleep, and sleep-promoting behaviors.⁸ The goal of this therapy is to reduce or eliminate dysfunctional beliefs and attitudes about sleep that contribute to sleep-related perfor-

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mance anxiety and sleep-disruptive habits.

Although each of the therapies discussed thus far have their merits, none can be considered an omnibus approach that addresses the range of behavioral, physiological, and psychological factors that perpetuate insomnia. As a consequence, multicomponent, cognitive-behavioral therapy (CBT) approaches have emerged and become increasingly popular for insomnia management. CBT combines cognitive therapy with other behavioral therapies, such as stimulus control, sleep restriction, sleep hygiene, and, occasionally, relaxation training, to address the multitude of perpetuating mechanisms currently thought to sustain chronic insomnia.^{8,9} Given its relatively broad focus, CBT overcomes the limitations of the previously mentioned, first generation behavioral approaches and meets the treatment needs of a wider array of insomnia sufferers.

Treatment Delivery and Accessibility

In practice, CBT and other behavioral insomnia treatments are typically provided in a series of individual treatment sessions. Both brief (one or two sessions) as well as more extended (six to eight sessions) individual treatment models have been described in the literature.³ Given the expense of individualized therapy, a number of alternate treatment delivery models have been tested. Several studies have shown group CBT (4–12 individuals per group), provided in 6–8 sessions, is a viable and effective alternative to individualized treatment.^{1,3,10} Telephone consultation also appears to be a viable alternative that produces results similar to group and individualized treatment.^{1,3} Other treatment delivery mediums, including self-help bibliotherapy, the internet, and television, have also been tested but appear somewhat less promising.¹

At present, access to behavioral insomnia therapies remains less than optimal. Currently, there is a relative paucity of trained sleep specialists who can administer such treatments.¹ Furthermore, in the United States, lack of insurance coverage for these therapies may present a financial barrier to many patients. Recently described behavioral insomnia therapies that can be administered by allied health personnel (e.g. office nurses) or primary care physicians themselves may help address this problem.^{1,3,10} Additionally, the American Academy of Sleep Medicine has recently instituted several measures to enhance access to these therapies, including offering an annual Behavioral Sleep Medicine Course open to M.D. and non-M.D. health care providers and commissioning a behavioral sleep medicine committee to study methods for enhancing insurance reimbursement for behavioral insomnia treatments. Hopefully, efforts such as these will provide improved access to the available behavioral insomnia treatments.

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