

TREATMENT MANUAL

COGNITIVE-BEHAVIORAL INSOMNIA THERAPY

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PREFACE

This treatment manual originally was prepared as an Appendix to our NIMH-funded grant (MH 48187) entitled, "Cognitive-Behavioral Insomnia for Primary Insomnia" The primary purpose of this manual is to describe and operationalize the cognitive-behavioral therapy (CBT) protocol. However, this manual has been written in such a manner as to provide other investigators and clinicians an understanding of CBT as well as step-by-step instructions for replicating our procedures. Thus, this document should facilitate the "exportation" of our treatment procedures to other investigators and sleep centers.

The specific treatment procedures presented herein have been derived from various sources. The *cognitive-behavioral therapy* (CBT) protocol is based on the writings of Morin (1989) and Spielman (1987) as well as our own research and clinical experience with this treatment. This treatment manual is divided into several sections. Each section provides a "treatment rationale" to be provided to patients undergoing treatment. Specific information and instructions to be provided to patients are highlighted with quotation marks (") and *italics*. Investigators who wish to replicate our procedures should present the highlighted information and instructions to their patients verbatim. It is also recommended that those who wish to use these treatments in their own insomnia research first review the list of "Suggested Readings provided at the conclusion of each section.

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COGNITIVE-BEHAVIORAL THERAPY TREATMENT INSTRUCTIONS

GENERAL RATIONALE

Cognitive-behavioral therapy (CBT) is based largely on Spielman's conceptual model for primary insomnia. According to Spielman, *predisposing factors, precipitating events, and perpetuating mechanisms* all contribute to the development of chronic primary sleep difficulties. In Spielman's view, some individuals may be particularly predisposed or vulnerable to sleep difficulties by virtue of having a "weak," "highly sensitive," or dysfunctional biological sleep system. When such individuals are confronted with the proper precipitating circumstances (e.g. a stressful life event), they tend to develop an acute sleep disturbance. This sleep problem, in turn, may then be perpetuated if the patient develops poor sleep hygiene practices (e.g. varying sleep-wake schedule, daytime napping, spending excessive time in bed, etc.) in an effort to cope with the sleep difficulty. Thus, although predisposing and precipitating factors contribute to insomnia, poor sleep hygiene is viewed as a critical sustaining element in the sleep disturbance. As a result, our cognitive-behavioral approach is, in part, designed to correct those sleep habits that ostensibly sustain or add to patients' sleep problems.

In our use of CBT, we have found it helpful to present the above rationale to patients so that they are more likely to accept and comply with this treatment's behavioral prescriptions. In the current project the following explanation will be presented at the beginning of first treatment session to each individual undergoing CBT.

"We have conducted a thorough evaluation of your sleep problem and, based on our findings, we believe that you will benefit from some information about sleep and some recommendations designed to help you change your sleep habits. When sleep problems linger on, as they have in your case, usually sleep habits develop and add to the sleep problem. The treatment you receive will educate you about your sleep problem and help you correct your bad sleep, habits so that you can again have a more normal sleep pattern."

COLLECTING BASELINE DATA

Before beginning CBT, it is essential to obtain baseline sleep data. In addition to providing information about the severity of the patient's sleep problem, these data are needed to determine individualized time in bed (TIB) prescriptions for each patient. In the current project, we will use results

of sleep log monitoring conducted during a 2-week pre-treatment assessment to obtain these baseline data. A copy of the log form to be used is provided in the appendix of our project proposal. Investigators wishing to replicate our procedures may photocopy the sleep log for use with their patients.

SESSION-BY-SESSION OUTLINE

Subjects who undergo CBT will be provided treatment in a standard fashion. Presented below is a brief outline that shows the content of the CBT treatment sessions. As shown by this outline, all essential treatment components including the treatment rationale, sleep education, and the behavioral regimen are presented during the first treatment session. Subsequent sessions are devoted to a review of the patient's progress, making alterations in time in bed (TIB) prescriptions, assessing/reinforcing patient compliance, and *trouble-shooting* patient problems with treatment. Those investigators who wish to replicate our procedures should use this outline to guide their application of CBT.

Treatment Outline

- I. Session 1: Primary Treatment Components (45 to 60 min.)
 - A. Presentation of Treatment Rationale (see page 4 top)
 - B. Sleep Education (see pages 6 to 9)
 1. Sleep Norms
 2. Circadian Rhythms
 3. Effects of Aging on Sleep
 4. Sleep Deprivation
 - C. Behavioral Regimen (see pages 11 to 19)
 - D. Instruction on Making Adjustments in Individualized TIB Prescriptions
- II. Sessions 2 to 4: Review of Progress/Trouble Shooting (30 to 45 min. each)
 - A. Review Sleep Logs/Alter TIB Prescriptions
 - B. Encourage/Reinforce Compliance
 - C. Trouble-shoot Patient's Problems

PROVIDING SLEEP EDUCATION

The sleep education provided to patients during CBT has two primary functions. First, it helps patients overcome their dysfunctional beliefs about sleep so that they may develop realistic sleep expectations. Also, it enables patients to better understand the rationale for the behavioral regimen used in this treatment. This understanding, in turn, increases the likelihood that patients will comply with treatment recommendations. In our pilot work with CBT, we found it useful to provide patients a rudimentary understanding of such topics as sleep norms, circadian rhythms, the effects of aging on sleep, and sleep deprivation. We selected these topics because they addressed the generic misconceptions and common concerns our patients presented in regard to their sleep and because they helped patients better understand how their sleep habits might have sleep-disruptive effects. Presented below is the text for the sleep education module that is used with CBT. In the current project, this information will be presented via audio cassette-tape recording.

"This treatment will require you to make some major changes in your sleep habits so you can improve your sleep. However, before you learn these new habits, it is important that you have a better understanding of your sleep needs and what controls the amount and quality of sleep you obtain. The information presented in this educational recording should help you understand how your body's sleep system works and prepare you for the specific treatment suggestions you will be given.

Before you make any changes in your sleep habits, it is important that you ask the question, 'How much sleep do I need each night?' Generally speaking, there is no one amount of sleep that 'fits' everyone. Most normal adults need 6 to 8 hours of sleep per night. However, some people need only 3 or 4 hours of sleep each night but others require 10 to 12 hours of sleep on a nightly basis. At this point, it is important set aside any previous notions or beliefs you might have about your sleep needs. These beliefs may be wrong and may hinder your progress. The treatment we give you will help you discover the amount of sleep that satisfies your needs and lets you feel alert and energetic during the day.

In addition to getting rid of any old ideas you have about your sleep needs, it is important that you learn some things about how your body's sleep system works. People, like many animals, have powerful internal 'clocks' that affect their behavior and bodily functioning. These 'clocks' seem to work in roughly 24-hour periods and produce 24-hour cycles in such things as digestion, body temperature, and the sleep/wake pattern. For example, if we record a person's body temperature for several days in a row, we will see a consistent up and down pattern or rhythm in temperature across each 24-hour day. The temperature will be at its lowest point around 3 or 4 AM, will rise through the morning and early

afternoon, and will hit its peak around 3 or 4 PM. Then, once again the temperature will begin to fall until it hits its low point in the early morning hours.

Although it is believed that different body 'clocks' control your temperature and sleep-wake pattern, these clocks seem to have an influence on each other. This fact is best demonstrated if a person is placed in a place like a cave, away from daylight, external clocks, and all other time of day indicators. In this situation the person will continue to show a 24 to 25 hour temperature rhythm and sleep-wake pattern. In most people, there is a close relationship between the temperature cycle and the sleep wake pattern they show. This relationship is shown in Diagram 1 (next page) that is included in the handout you have been given (5-sec pause). As shown by this handout, the main sleep period begins when body temperature is falling and later ends after the body temperature begins rising again.....

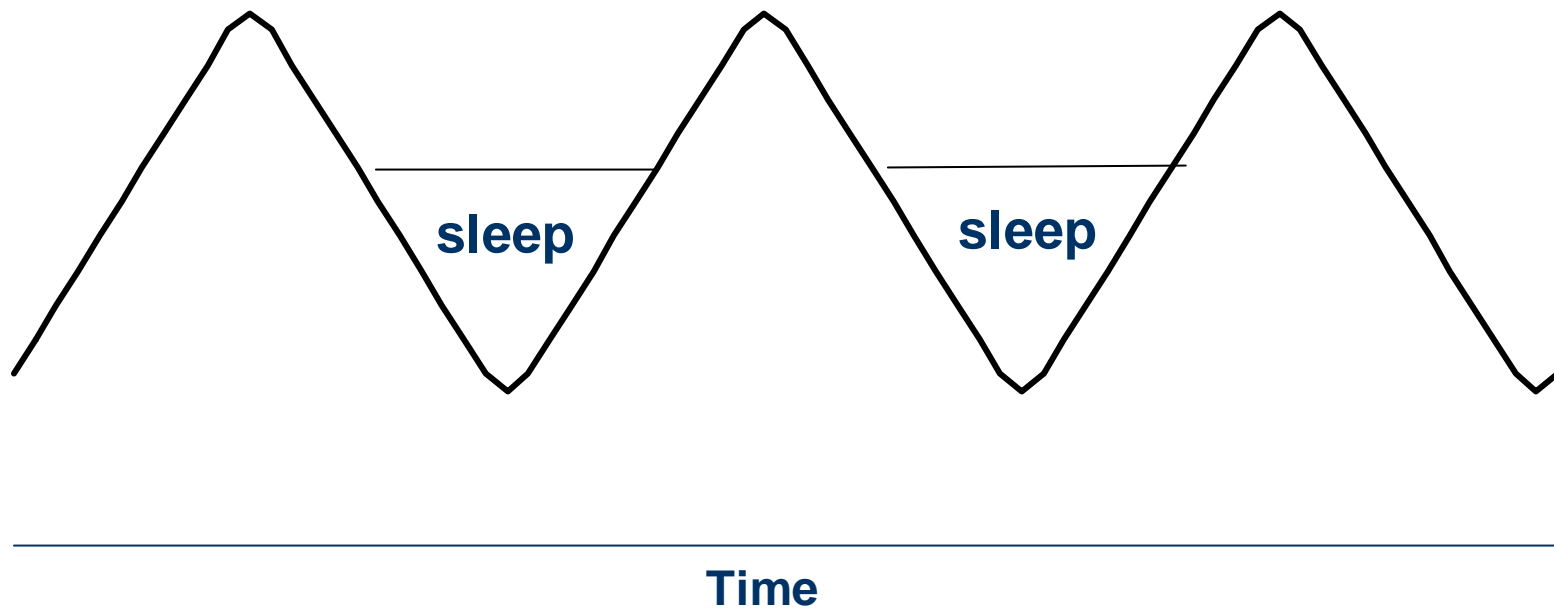
In the real world, work schedules, meal times, and other activities work together with our body clocks to help us keep a stable sleep-wake pattern. However, significant changes in our sleep-wake schedule can interfere with our ability to sleep normally. This may be caused by what is often called 'jet lag.' If, for example, a man who lives in New York flies to Los Angeles, he is likely to initially have some difficulty with in his sleep and some daytime fatigue. This occurs because the 3-hour time changes places his new desired sleep-wake schedule at odds with his 'body clock' that is 'stuck' in his old time zone. This situation is shown in Diagram 2 (2 pages ahead) of your handout (pause 10 sec.). The man's body clock remains on New York time and initially lags behind the real world clock time in California.

This traveler is likely to become sleepy 3 hours earlier than he wishes and to wake up 3 hours before he prefers on the initial days of his trip. Fortunately, with repeated exposure to the light-dark pattern in the new time zone, the body clock get re-set and allows the traveler to 'get in sync' with the new time zone. However, this traveler is again likely to experience temporary problems with his sleep and fatigue in the daytime when he first returns to New York.

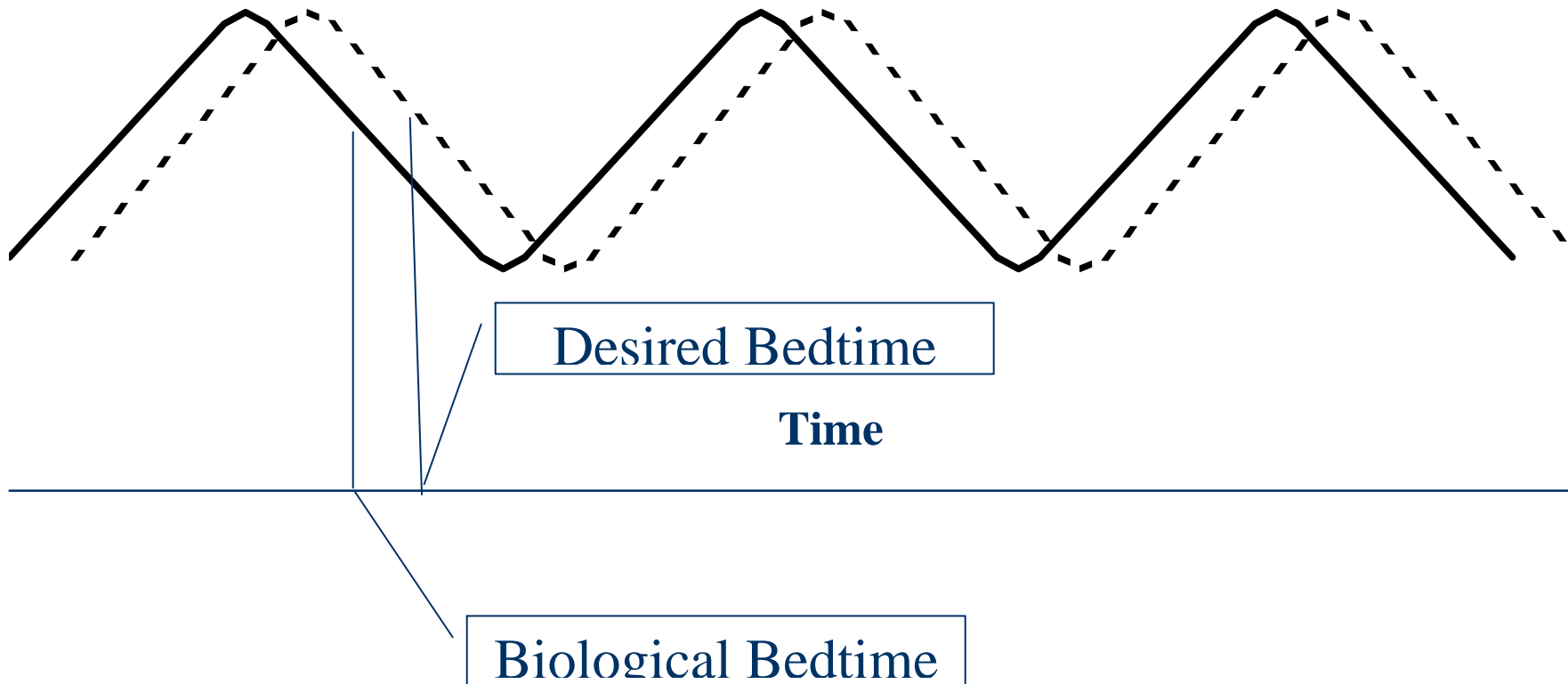
In addition to our body clocks, the getting older usually leads to changes in our sleep. As we get older we tend spend more time awake in bed and we spend less time in the deepest parts of sleep. Because sleep becomes more 'shallow' and broken as we age, we may notice a decrease in the quality of our sleep as we grow older. Although these changes set the stage for the development of sleep problems, they do not guarantee such problems. However, because of these changes, it is probably unrealistic to expect that you will again have the type of sleep you enjoyed as a teenager or young adult.

Finally, before attempting to change your sleep habits, it is important that you understand the effects of sleep loss on you. This understanding is important because many who have sleep problems make these problems worse by the things they do to make up for lost sleep. For example, people may take daytime naps, go to bed too early or 'sleep in' following a poor night's sleep in order to avoid or recover lost sleep. Although these habits seem logical and sensible, they all may serve to continue the sleep problems. In fact, these habits are usually the opposite of what needs to be done to improve sleep.

— Circadian Temperature Rhythm



— Circadian Temperature Rhythm - - Desired Sleep/Wake Schedule



In some respects, sleep loss may have a positive following night's sleep. In fact, the drive to sleep gets stronger the longer one is awake before attempting to sleep. For example, a person is much more likely to sleep for a long time after being awake for 16 hours in a row than after being awake for only 2 hours. It is important to remain awake through each day in order to build up enough sleep drive to produce a full night's sleep.

Extended periods of sleep loss, of course, may have some bad effects as well. If people are totally deprived of a night's sleep, they usually become very sleepy, have some trouble concentrating and generally feel somewhat irritable. However, they typically can continue most normal daytime activities even after a night without any sleep at all. When allowed to sleep after a longer than normal period of being awake, most people will tend to sleep longer and more deeply than they typically do on a normal night. Although people tend not to recover all of the sleep time they lost, they do typically recover the deep sleep they lost during longer than usual periods without sleep. Hence, your body's sleep system has some ability to make up for times when you don't get the amount of sleep you need.

Since you have kept a sleep log for several weeks, you have probably noticed that you occasionally had a relatively good night's sleep after one or several nights of poor sleep. Such a pattern suggests that your body's sleep system has an ability to make up for some of the sleep loss you experience over time. Although your sleep is not normal, you can take some comfort in this observation. The important point to remember is that you do not need to worry a great deal about lost sleep nor should you actively try to recover lost sleep. Needless worry and attempts to recover lost sleep will only worsen your sleep problem.

This recording is not intended to 'make light' of your sleep problem. You do indeed have a sleep problem that needs to be treated. This recording is intended to help you to understand your problem. With this knowledge you should now understand the purpose for the treatment recommendations your therapist will present to you. If you have any questions about this educational material please present them to your therapist at this time."

BEHAVIORAL TREATMENT REGIMEN

The behavioral treatment regimen uses stimulus control and sleep restriction strategies to standardize the patient's sleep/wake schedule, eliminate sleep incompatible behaviors that occur in the bed and bedroom, and restrict time in bed (TIB) in an effort to force the development of an efficient, consolidated sleep pattern. The majority of behavioral recommendations included in this regimen are standard for all patients. However, the TIB prescriptions provided are based on a baseline estimate (derived from sleep logs) of each patient's sleep requirement. Since TIB prescriptions may vary from patient -to- patient, these prescriptions allow for the tailoring of this regimen to fit each patient's specific sleep needs.

It is our usual practice to provide each patient a pamphlet that delineates the behavioral regimen to be followed. When we review this pamphlet with the patient, we provide a brief justification for each behavioral "rule" or recommendation included in the regimen. A sample of the pamphlet is provided in the appendix. As can be seen, this pamphlet provides a list of "rules" to follow and also includes spaces for noting the patient's standard wake-up time and suggested earliest bedtime. Presented below is text that provides the rationale for each rule. This text should be used with each patient receiving CBT.

Rule 1: *"First it is important that you choose a standard wake-up time and stick to it every day regardless of how much sleep you actually get on any given night. This practice will help you develop a more stable sleep pattern. As discussed during the sleep education tape, changes in your sleep-wake schedule can disturb your sleep. In fact, you can create the type of sleep problem that occurs in jetlag by varying your wake-up time from day to day. If you stick to a standard wake-up time, you will soon notice that you usually will become sleepy at about the right time each evening to allow you to get the sleep you need."*

Rule 2: *"While in bed, you should avoid doing things that you do when you are awake. Do not read, watch T.V., eat, study, use the phone, or do other things that require you to be awake while you are in bed. If you frequently use your bed for activities other than sleep, you are unintentionally training yourself to stay awake in bed. If you avoid these activities while in bed, your bed will eventually become a place where it is easy to go to sleep and stay asleep. Sexual activity is the only exception to this rule."*

Rule 3: *Never stay in bed, either at the beginning of the night or during the middle of the night, for extended periods without being asleep. Long periods of being awake in bed usually lead to tossing and turning, becoming frustrated, or worrying about not sleeping. These reactions, in turn, make it more difficult to fall asleep. Also, if you lie in bed awake for long periods, you are training yourself to be awake in bed. When sleep does not come on or return quickly, it is best to get up, go to another room, and only return to bed when you feel sleepy enough to fall asleep quickly. Generally speaking, you should get up if you find yourself awake for 20 minutes or so and you do not feel as though you are about to go to sleep."*

Rule 4: *Do not worry, mull over your problems, plan future events, or do other thinking while in bed. These activities are bad mental habits. If your mind seems to be racing or your can't seem to shut off your thoughts, get up and go to another room until you can return to bed without this thinking interrupting your sleep. If this disruptive thinking occurs frequently, you may find it helpful to routinely set aside a time early each evening to do the thinking, problem-solving, and planning you need to do. If you start this practice you probably will have fewer intrusive thoughts while you are in bed."*

Rule 5: *You should avoid all daytime napping. Sleeping during the day partially satisfies your sleep needs and, thus, will weaken your sleep drive at night."*

Rule 6: *In general, you should go to bed when you feel sleepy. However, you should not go to bed so early that you find yourself spending far more time in bed each night than you need for sleep. Spending too much time in bed results in a very broken night's sleep. If you spend too much time in bed, you may actually make your sleep problem worse. We will help you to decide the amount of time to spend in bed and what times you should go to bed at night and get out of bed in the morning."*

DETERMINING TIME IN BED PRESCRIPTIONS

Making time in bed (TIB) prescriptions for patients is a fairly straightforward process once baseline sleep log data are available. To determine the initial TIB prescription for a particular patient, the average total sleep time (ATST) displayed by the patient on baseline sleep logs is first calculated. Subsequently, an initial TIB prescription is determined using the formula: $TIB = ATST + 30$ minutes. Adding 30 minutes to the ATST allows for sleep onset latency and normal, brief nocturnal arousals.

Once the initial TIB prescription is determined, it is important to help the patient choose a standard wake-up time and earliest bed time so that the prescription can be followed. In doing so it, is important to have the patient consider both "ends" of the night. A patient may initially decide that 7:00 AM is a desirable wake-

up time. However, if the initial TIB prescription is 6 hours, this wake-up time would result in an earliest bedtime of 1:00 AM. Upon discovering this fact, the patient may wish to select an earlier wake-up time so that bedtime can be earlier during the night. Whatever wake-up and bed times are chosen, it is important to involve the patient in this decision-making process. Compliance with the TIB prescription will usually be best when the patient takes an active role in selecting bed and wake-up times.

In addition to these instructions, the patient should be given instructions that will enable her/him to make needed TIB alterations to establish an optimal sleep wake pattern. The following text will be used in this project.

"You should try this sleep-wake schedule for one week and determine how well you sleep at night and how tired or alert you feel in the daytime. If you sleep well most nights and are as alert as you would like to be in the daytime, then you probably should make no changes in your time in bed each night. If, however, you find you are sleeping well at night, but you feel tired most days, you should try increasing your time in bed at night by 15 minutes. If, for example, you begin with 7 hours in bed per night the first week and find that you are tired in the daytime despite sleeping soundly at night, you should try spending 7 hours and 15 minutes in bed each night during the second week. If, with this amount of time in bed, you continue to sleep soundly at night but still feel tired in the daytime, you can add another 15 minutes to the time in bed during the third week and so on. However, when you notice an increase in the amount of time you are awake in bed each night, you will know that you are spending too much time in bed at night. If this occurs, you should decrease your time in bed by 15 minutes per week until you find the amount of time that enables you to sleep soundly through the night and feel reasonable alert in the daytime. You should also decrease your time in bed after the first week if the initial amount of time in bed we choose together today does not reduce your time awake in bed each night.

To help you make decisions about changing your time in bed, it may be helpful for you to perform a simple calculation each day using the information you recorded on your sleep log. You can divide the amount of time you slept during the night by the amount of time you spent in bed. If, for example, you sleep 6 hours but you spend eight hours in bed on a particular night, you would divide 6 by 8 and get a value = .75 as a result. Generally speaking, you should increase your time in bed following a week during which the average of these values you calculate for each night is .85 or higher and you continue to experience daytime sleepiness. In contrast, you should decrease your time in bed following a week during which your average of these values is less than .80."

FOLLOW-UP SESSIONS

Therapists should use follow-up sessions to: (1) assist patients in making needed adjustments in their TIB prescriptions; (2) encourage and reinforce compliance with treatment recommendations; and (3) "troubleshoot" patient's problems with the behavioral regimen.

Assistance with TIB Changes: The method for making adjustments in TIB prescriptions has been discussed above. In doing so, therapists will review each patient's sleep log and determine her/his average sleep efficiency during the week prior to the current session. The therapist will suggest a 15-minute increase in TIB if

the patient's sleep efficiency is $\geq 85\%$ and the patient has noted daytime sleepiness with her/his current TIB prescription. The therapist will suggest a 15-minute decrease in TIB if the patient's sleep efficiency is $< 80\%$.

Reviewing/Reinforcing Compliance: In addition to the above assistance, therapists will use follow-up sessions to reinforce the patient's adherence to the prescribed CBT regimen. The therapist will first assess patient compliance by reviewing each rule in the CBT regimen and asking the patient about compliance with it. The therapist should freely compliment the patient who closely follows treatment recommendations. In doing so, however, it is particularly useful to point out the relationship between the patient's compliance and improvement noted by sleep logs and/or self-report. For example, therapist comments like, "You have done an excellent job following through on the strategies we discussed last time. As you can see, your efforts have paid off. Your logs show that you are now sleeping much better. Keep up the good work!" In providing such comments it is important to remain genuine and avoid patronizing the patient. Thus, language that feels comfortable and consistent with the therapist's usual interactional style should be used in reinforcing compliance.

Trouble-Shooting Patients' Problems: To a great extent, trouble-shooting consists of assessing patient compliance with the treatment regimen. Often a lack of treatment response is traceable to the patient's misunderstanding of or noncompliance with treatment recommendations. By far the most common compliance problems are patients' failures to adhere to a standard wake-up time, to get out of bed during the night when they are unable to sleep, and to engage in unintentional sleeping during the daytime. A careful review of sleep logs should be employed to identify noncompliance with prescribed wake-up times. Also, specific questioning of the patient to determine the occurrence of daytime dozing episodes and extended periods of wakefulness spent in bed should be conducted. When such problems are identified, the behavioral regimen should be reviewed with the patient and methods to help the patient avoid these practices in the future should be discussed. The following case examples demonstrate how the therapist may intervene when these compliance difficulties are identified.

Case 1: Mr. X was a patient who presented to our sleep center with a complaint of sleep-maintenance insomnia. Evaluation of this patient suggested that he suffered from primary insomnia and warranted a trial of behavioral therapy. He was, thus, provided our CBT treatment as described above. After one week of this treatment, he reported back to our center noting little improvement. From a review of his sleep logs and a discussion with him, it was discovered that he failed to adhere to a standard wake-up time as instructed. In fact, on three of the nights during the first week of treatment, he stayed in bed over 2 hours beyond his prescribed wake-up time reportedly to compensate for periods of wakefulness during the night. Also, he admitted to failing to get out of bed during extended periods of wakefulness

because he thought that if he would lie in bed long enough he would eventually go to sleep. Although he adamantly denied daytime napping he did admit to some unintentional dozing around 7:00 PM each evening while he was reclining on a couch watching T.V.

To correct the patient's sleep problem, the therapist first explained the deleterious effect the noted noncompliance would continue to have on his sleep. Subsequently the patient and therapist jointly decided that the patient would place his alarm clock in a location so that he could not reach it while in bed. This measure was used to force the patient to get out of bed at the selected wake-up time. In addition, the therapist helped the patient decide what activities he might do instead of lying in bed when he experienced extended nocturnal awakenings. Finally, the patient was encouraged to refrain from reclining while watching TV in the evening and to have his wife help him remain awake during the early evening hours. At a follow-up session one week later, the patient showed markedly improved compliance and a reduction in his sleep maintenance difficulty.

Case 2: Mr. M. was a 52 year-old college professor who presented with sleep onset and maintenance difficulties. After a thorough assessment it was determined that he suffered from primary insomnia and was, hence, begun on a course of CBT therapy. After two weeks of this treatment, he returned to the sleep clinic noting marked improvement in his sleep onset problem but continued intermittent difficulties maintaining sleep. Upon questioning by the therapist it was discovered that Mr. M. followed the recommendation of getting out of bed in the middle of the night when he could not sleep. However, on such occasions, he typically watched a late night talk show on television and found he did not want to return to bed before he saw the ending to this show. Since Mr. M.'s TV watching seemed to be extending his middle-of-the-night awakenings, he was discouraged from continuing this practice. The patient, subsequently complied with this recommendation and soon became able to sleep through most nights.

Case 3: Ms. C. was a 66 year-old retired female who presented with severe sleep-maintenance insomnia that developed after her retirement. Following an assessment that suggested a diagnosis of primary insomnia, she was begun on a course of CBT. After two weeks of following this regimen she returned to the clinic anxiously explaining that her sleep had gotten worse. Furthermore, she reported that the strict behavioral regimen made her very anxious and she felt under too much pressure to sleep. To address this problem, a more lenient TIB in bed prescription was established and the patient was allowed to take a brief (30 min.) daytime nap each day if she felt the need to do so. With these changes, the patient was able to relax and gradually showed nocturnal sleep improvements over the ensuing month of treatment.

Case 4: Mr. R was a 47 year-old professional who presented with an 11-year history of difficulty initiating and maintaining sleep. The initial evaluation suggested a history of sleep difficulties that the reportedly were sometimes caused by conflicts with co-workers and supervisors. Nonetheless, the patient appeared to often allot 9 or more hours for sleep at night and he reported he preferred to keep his bedroom TV playing all night so that he would have something to distract him if he did awaken during the night. When the CBT regimen was introduced, he appeared somewhat skeptical particularly when it was suggested that he eliminate his TV watching in his bedroom and that he reduce his time in bed. Although the patient stated he would try the regimen, he showed evidence of only marginal compliance when he returned for his subsequent treatment session. Specifically, he continued his former practice of keeping the TV on all night and he often stayed in bed at least 1 hour more than recommended. Although the patient continued to voice skepticism, he eventually did agree to conduct a series of 'clinical experiments' on himself to see the effects of each of the disputed CBT suggestions. Hence, during the subsequent 2 weeks he agreed to remove himself from his bedroom when he couldn't sleep instead of watching his TV in bed. When, on a subsequent visit, he reported he was surprised that this strategy did lead to gradual sleep improvement, he did agree to reduce his time in bed to an amount that closely approximated the therapist's suggestions. Upon his subsequent return, he again agreed the

clinical experiment had benefited him. Although the patient noted that he would not agree to avoid sleeping in on weekend mornings, he did agree to stay in bed no longer than 1 hour beyond his weekday rising time. Since the patient had made reasonable progress and he seemed very resistant to further changes, the therapist chose to commend him on his accomplishments and refrained from attempts at additional interventions that very likely would have been met with excessive resistance.

Case 5: Ms. T. was a 72 year-old retired schoolteacher who presented with primary sleep maintenance insomnia. Initial evaluation showed that she manifest many sleep disruptive habits such as frequent napping while watching the evening news and remaining in bed as much as 10 hours on some of her more difficult nights. Given these findings, a course of CBT was initiated. Pre-treatment sleep logs had shown her average sleep time at night to be approximately 6.5 hours, so she was initially restricted to 7 hours in bed each night at the start of treatment. Five days after her first appointment she phoned the therapist with concerns about markedly increased daytime sleepiness. In fact, she noted that she had fallen asleep in her car after have stopped for a traffic light. Because of this, she had become concerned about driving her car and wondered what she should do. Questioning of the patient indicated that she had adhered to the TIB restriction very strictly and she was sleeping very soundly on most nights. However, she continued to feel sleepy in the daytime and had to constantly fight off naps. Hence, the therapist suggested she increase her time in bed by 30 minutes per night to try to reduce this sleepiness. He also suggested that she ask her husband to take over all driving responsibilities until she returned to the clinic for follow-up one week later. Upon her presentation for her ensuing appointment, she reported reduced daytime sleepiness with the increased time in bed. Her sleep logs showed she was sleeping fairly well at night with very few extended awakenings. As she continued to report some mild sleepiness, the therapist suggested she add another 15 minutes to her TIB each night. After trying this new TIB prescription, she reported an elimination of her daytime sleepiness and a continuation of improved sleep at night.

These cases demonstrate some strategies that might be used in follow-up sessions with patients undergoing CBT. Although the above cases do not illustrate all possible problems patients might present in complying with and tolerating treatment, they do illustrate the some commonly encountered problems.

SUGGESTED READINGS

- Anderson MW, Zendell SM, Rosa DP, Rubenstein ML, Herrera CO, Simons O, Caruso L, Spielman AJ. Comparison of sleep restriction therapy and stimulus control in older insomniacs: An update. *Sleep Research*, 1988; 17: 141.
- Bootzin RR, Epstein DR. Stimulus Control. In K. L. Lichstein & C. M. Morin (Eds.) *Treatment of late-life insomnia*. Thousand Oaks, CA: Sage Publications, Inc.
- Carskadon MA, Brown ED, Dement WC. Sleep fragmentation in the elderly: Relationship to daytime sleep tendency. *Neurobiology of Aging*, 1982; 3: 321-27
- Edinger JD, Hoelscher TJ, Marsh GR, Ionescu-Pioggia M, Lipper S. A cognitive-behavioral therapy for sleep-maintenance insomnia in older adults. *Psychology and Aging*, 1992; 7: 282-9.
- Edinger J. D. & Wohlge-muth, W. K. The significance and management of persistent primary insomnia: the past present and future of behavioral insomnia therapies *Sleep Medicine Reviews*, 1999; 3: 01-18.
- Edinger JD, Wohlge-muth WK, Radtke RA, Marsh GR, Quillian RE. Cognitive behavioral therapy for treatment of chronic primary insomnia: a randomized controlled trial. *Journal of the American Medical Association*, 2001; 285: 1856-64.

- Espie CA, Inglis SJ, Tessier S, Harvey L. The clinical effectiveness of cognitive behaviour therapy for chronic insomnia: implementation and evaluation of a *sleep clinic* in general medical practice. *Behaviour Research and Therapy*, 2001; 39: 45-60.
- Hoelscher TJ, Edinger JD. Treatment of sleep-maintenance insomnia in older adults: Sleep period reduction, sleep education and modified stimulus control. *Psychology and Aging*, 1988; 3: 258-63.
- Morin, C. M., Stone, J., Trinkle, D., Mercer, J., & Remsberg, S. Dysfunctional beliefs and attitudes about sleep among older adults with and without insomnia complaints. *Psychology and Aging*, 1993; 8: 463-7.
- Morin CM. *Insomnia: psychological assessment and management*. New York: Guilford Press, 1993.
- Spielman AJ, Saskin P, Thorpy MJ. Treatment of chronic insomnia by restriction of time in bed. *Sleep*, 1987; 10: 45-55.
- Wohlgemuth WK, Edinger, JD. Sleep restriction therapy. In K. L. Lichstein & C. M. Morin (Eds.) *Treatment of late-life insomnia*. Thousand Oaks, CA: Sage Publications, Inc.

SLEEP LOG

SAMPLE

DAY OF THE WEEK	Monday							
CALENDAR DATE	3/25/96							
1. Yesterday I napped from ___ to ___ (note time of all naps).	1:30-2:45 PM							
2. Last night I took ___ mg. of ___ or ___ of alcohol as a sleep aid.	Ambien 5 mg.							
3. Last night I turned off the lights and attempted to fall asleep at ___ (AM or PM?)	11:30 PM							
4. After turning off the lights it took me about minutes to fall sleep.	40 Min.							
5. I woke from sleep ___ times. (Do not count your final awakening here)	2 Times							
6. My awakenings lasted ___ minutes. (List each awakening separately.)	25 Min. 40 Min.							
7. Today I woke up at ___ (AM or PM?) NOTE this is your final awakening.	6:30 AM							
8. Today I got out of bed for the day at (AM or PM?).	7:15 AM							
9. I would rate the quality of last night's sleep as: 1 = very poor 4 = good 2 = poor 5 = excellent 3 = fair.	3							
10. When I awoke today I felt: 1 = not all rested 4 = rested 2 = slightly rested 5 = well rested 3 = somewhat rested	2							

