

Cognitive Therapy for Dysfunctional Beliefs about Sleep and Insomnia

Charles M. Morin, Lynda Bélanger

Université Laval, Québec City, Canada

PROTOCOL NAME

Cognitive therapy for dysfunctional beliefs about sleep and insomnia.

GROSS INDICATION

This intervention is indicated for primary and comorbid insomnia, acute or chronic duration.

SPECIFIC INDICATION

This therapeutic approach is indicated specifically for individuals with evidence of dysfunctional sleep cognitions and, particularly, faulty sleep-related beliefs. There is no evidence that it is more or less effective for specific subtypes of insomnia (initial, middle, mixed) or diagnostic subgroups (primary or comorbid insomnia). Clinically, cognitive therapy is likely to be more helpful for patients with psychophysiological or paradoxical insomnia, relative to idiopathic insomnia, as the former patients tend to endorse more unhelpful beliefs which may perpetuate their sleep difficulties.

CONTRAINDICATIONS

There is no absolute contraindication for using cognitive therapy for insomnia. As for most psychotherapy, however, this therapeutic approach requires some psychological mindedness and a minimum capacity of introspection in order to explore the validity of beliefs and thoughts that are likely to contribute to insomnia. It may also be necessary to adapt or simplify the level of cognitive therapy with some patients.

RATIONALE FOR INTERVENTION

Cognitive therapy seeks to alter sleep-related cognitions (e.g., beliefs, attitudes, expectations, and attributions) that are presumed to contribute to the maintenance or exacerbation of insomnia. The basic premise of this approach is that appraisal of a given situation (sleeplessness) can trigger negative emotions (fear, anxiety) that are incompatible with sleep. For example, when a person is unable to sleep at night and begins dwelling on the possible consequences of sleep loss on the next day's performance, this can set off a spiral reaction and feed into the vicious cycle of insomnia, emotional distress, and more sleep disturbances (see Figure 11.1).

Within this conceptual framework, cognitive therapy is designed to guide patients in identifying some unhelpful sleep-related cognitions and beliefs and in reframing them with more adaptive substitutes in order to short-circuit the self-fulfilling nature of this vicious cycle [1,2]. Specific treatment targets include (but are not limited to):

- unrealistic expectations about sleep requirements (“I must get my 8 hours of sleep every night”);
- faulty attributions about the causes of insomnia (“My insomnia is entirely due to a biochemical imbalance”);

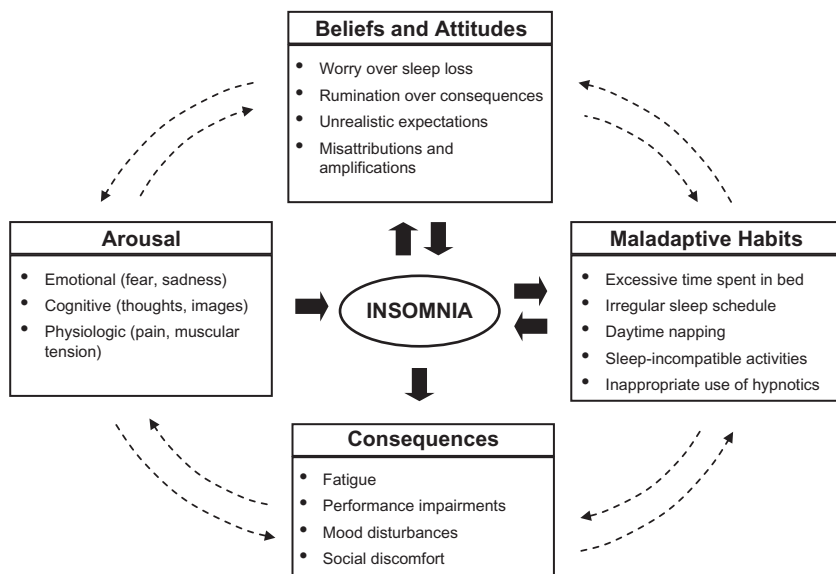


FIGURE 11.1 A conceptual model of insomnia maintenance. A microanalytic model of chronic insomnia showing how maladaptive beliefs and sleep habits can contribute to perpetuate insomnia. Reproduced with permission from Morin (1993).

- excessive worry about sleep loss and amplification of its consequences (“Insomnia will have serious consequences on my health”);
- misconceptions about healthy sleep practices (“If I only try harder, I’ll eventually return to sleep”).

STEP BY STEP DESCRIPTION OF PROCEDURES

Cognitive therapy for unhelpful sleep-related beliefs relies on the same clinical procedures (e.g., reappraisal, reattribution, decatastrophizing, attention shifting, hypothesis testing) used in the cognitive management of other disorders such as anxiety and depression. Through cognitive techniques such as Socratic questioning, collaborative empiricism, and guided discovery [3,4], the therapist aims at helping patients to (1) identify their negative automatic thoughts about sleep and insomnia which are hypothesized to maintain the target problem; (2) recognize the connections between cognitions, emotions, and behaviors; (3) examine the evidence for and against their sleep-related distorted automatic thoughts; (4) substitute more realistic interpretations for these biased cognitions; and (5) learn to identify and modify their core beliefs which predispose to distorted perceptions of the problem [5].

As a preliminary step to implementing these procedures, it is particularly important to provide patients with a conceptual framework of insomnia – that is, an explanation of the role of cognitive processes in regulating emotions, physiological arousal, and behavior (i.e., cognitive theory of emotions) (Figure 11.2). This process is facilitated by starting off with examples unrelated to insomnia that can trigger various negative emotions (e.g., being late for an appointment and stuck in traffic; not being selected for a job; a friend

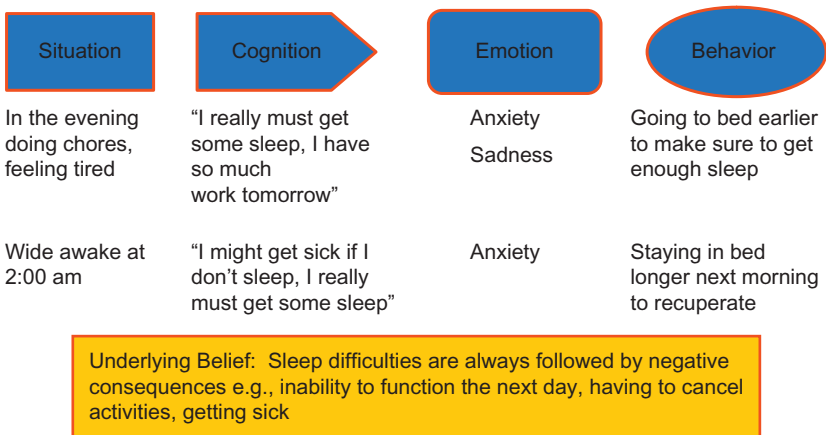


FIGURE 11.2 Basic Premise of the Cognitive Model. Relationship between cognitions (beliefs), emotions and behaviors.

being late for an appointment). It is important that the patient understands how a person's interpretation of a given situation may modulate the types of emotional reaction to that situation. Collaboratively, therapist and patient can elicit several examples to illustrate the relationship between thoughts, emotions, and behaviors, and then move on to more specific examples related to insomnia.

Once the cognitive model is understood and the importance of targeting beliefs and attitudes about sleep is integrated, the next step is to identify patient-specific dysfunctional sleep cognitions in order to eventually question their validity and replace them with more rational substitutes. Self-monitoring is usually a very effective strategy to identify automatic thoughts. It can be achieved in the office through the use of Socratic verbal questioning and imagery recollection. Starting from a recent example when the patient had trouble sleeping, the therapist guides the patient to identify his or her automatic thoughts and associated emotions. The therapist can ask questions such as, "What was running through your mind when you were unable to sleep last night?", "How did you feel at that time?", "What did you think then?".

Home practice is highly important in cognitive therapy. The automatic thoughts record form [3,4] is a very useful assessment tool to monitor a wider variety of dysfunctional thoughts than those reported during treatment sessions and is a practical tool to help patients continue monitoring their sleep-related negative automatic thoughts between sessions. Table 11.1 presents an example of this record form, with the standard three-column format. Patients are asked to identify: (1) the situation or event which led to the unpleasant emotion, (2) the automatic thoughts and/or images that went through their mind at that time, and (3) the emotional reactions (e.g., helplessness, anxiety, anger) and their intensity. The emotion's intensity is rated on a scale from 0 to 100. Patients should pay particular attention to their automatic thoughts when they

TABLE 11.1 Example of a Standard Three-column Automatic Thoughts Record Form

Situation (Specify Date and Time)	Automatic Thoughts (What was Going Through Your Mind?)	Emotions (Rate Each Emotion's Intensity on a Scale of 1–100%)
09/28 Watching TV in the evening	"I must sleep well tonight, I have so much work tomorrow"	Anxious (50%)
09/29 Lying in bed awake at 2 am	"This has to stop! I can't go on living like this. This is going to make me ill" "I have to get some sleep!"	Anxious (75%) Discouraged/sad (60%)

have trouble sleeping at night or have trouble functioning during the day, or when they worry about sleep.

Self-report questionnaires can also be useful to help identify and select relevant treatment targets to be addressed in therapy. In our clinical practice and research, we use the Dysfunctional Beliefs and Attitudes about Sleep Scale (DBAS) [1]. This self-report scale was designed to assess a variety of sleep-related beliefs and identify those that are more strongly engrained and emotionally laden. A 30-item and a 16-item version are available (see Appendix 11.1 for the 16-item version). Patients indicate the extent to which they agree or disagree with each statement on a scale ranging from 0 (strongly disagree) to 100 (strongly agree). The content of the items reflects several themes (listed above) related to expectations about sleep requirements, explanations of the causes of insomnia, perception of its consequences, and beliefs about sleep-promoting practices. Higher scores in one or more of these domains have been linked to more severe sleep disturbances and higher distress associated with insomnia [6–8].

Once patient-specific sleep cognitions have been identified and patients are comfortable with thought-monitoring, the next step is to encourage patients in viewing their thoughts as only one of many possible interpretations. The next step of therapy thus consists of finding alternatives to the dysfunctional sleep cognitions by using cognitive restructuring techniques in order to weaken the association between sleeplessness and the negative thoughts that are hypothesized to maintain the aroused state. To guide patients in evaluating the validity and usefulness of their cognitions, the therapist can ask probing questions such as:

- What is the evidence for this idea?
- What is the evidence against?
- What makes you think this will happen?
- What are the chances that this will happen?
- What is the worst that could happen?
- Could you live through it?
- Are there any alternative ways of seeing this situation?
- What is the most realistic outcome?

Here are some examples.

In the following example, clinician and patient work collaboratively to reduce the degree of attention given to insomnia consequences on daytime functioning and to examine if some other factors might also explain some daytime impairments.

Therapist: During the evaluation you mentioned that you are quite worried about the possible consequences of insomnia on your ability to function, that you often feel that you won't be able to function at all during the day after a poor night's sleep. Did I understand this correctly?

- Patient:** Yes, that looks like it.
- Therapist:** Let's look at this concern more closely ... Have there been times recently when this has happened?
- Patient:** Yes there have been a few.
- Therapist:** Would you say that every time you have had a poor night's sleep lately you were unable to function the next day?
- Patient:** Well ... probably not every time, maybe 50 percent of the time.
- Therapist:** Can you remember times recently when you were able to function fairly well during the day despite having slept poorly the preceding night?
- Patient:** This has happened a couple of times and each time I find myself wondering about how I managed ...
- Therapist:** Let's look at the opposite situation: have there been times when you had difficulties functioning or had no energy during the day even though you had slept well the night before?
- Patient:** Yes, that has happened several times as well.
- Therapist:** Are there other situations or activities you do either at work or at home that could also explain how you feel during the day?
- Patient:** Well ... I had never looked at this from this angle before ... I guess that when I'm under a lot of pressure at work or out of a big meeting; chances are that I'll feel tired at the end of the day, even if I have slept well the night before ... Perhaps because I feel a lot of stress during some of those meetings ...
- Therapist:** If we take another look at this belief that you're always unable to function after a poor night sleep, how do you see this now?
- Patient:** Well, I think that the point we are getting at is that probably sleeping poorly is not the only cause of how I may feel or function during the day ...
- Patient:** hmm ... and although I may feel more tired during the day after a poor night's sleep, most of the time I can still function fairly well, at least I can get most things done.
- Therapist:** That's really interesting! It seems that the more a person worries about those daytime impairments, the greater the chance that it will take longer to fall back to sleep; this is because of the negative emotions they are feeling and worry during the day about this may even affect their sleep the following night. This is like a self-fulfilling prophecy ...
- Patient:** I guess that really makes a lot of sense ... I have often thought that everything seems worse in the middle of the night ... I should wait before judging and definitely avoid panicking.

Self-monitoring is still extremely useful at this stage in order to help the patient modify his or her thinking about sleep and realize how much the emotional reaction changes depending on the nature of the thoughts entertained. For that purpose, two columns are added to the three-column automatic thoughts form: a fourth column where patients are asked to identify possible alternative ways of seeing things (i.e. more rational and realistic thoughts) – for example, finding evidence for and against the thought/belief, listing the impact that the thought has on his or her emotions, or estimating the probability that the feared outcome will take place; and a fifth column where the associated emotions are reassessed as a function of this alternative thinking. Table 11.2 presents an example of a standard five-column automatic thoughts record form [4].

TABLE 11.2 Example of a Standard Five-column Automatic Thoughts Record Form

Situation (Specify Date and Time)	Automatic Thoughts (What was Going Through Your Mind?)	Emotions (Rate each Emotion's Intensity on a Scale of 1–100%)	Alternative Thoughts (How Can I See This Situation Differently?)*	Emotions (Rate Each Emotion's Intensity on a Scale of 1–100%)
10/08 Wide awake in the middle of the night	“Oh no, not again! What type of day will I have tomorrow? I definitely won't be able to function at work”	Anxious (90%)	“There is really no point in worrying about this right now ... I can't force sleep anyway ...” “I can usually still get some work done after a poor night's sleep, worrying will only make things worse and keep me awake even longer.” Even if feeling tired is unpleasant I can find ways to cope. I always end up okay in the end ...”	Anxious (15%)

*You can use the following questions to help you revise each negative automatic thought: “What are the evidences for and against this thought?”, “ What are the chances that this will happen?”, “How does thinking this way make me feel?”

POSSIBLE MODIFICATIONS/VARIANTS

Cognitive therapy uses a variety of procedures to change cognitions; some of these strategies are more verbal in nature and others may be more performance-based (i.e., behavioral experiments) [4]. The level of cognitive therapy that is necessary (e.g., addressing core beliefs) varies across patients, and has to be adapted to the severity of their problem and their capacity to identify and question their own thoughts and emotions. The dosage (intensity) of cognitive interventions for unhelpful beliefs about sleep as well as treatment response can thus vary greatly across patients. Although most people will be able to grasp the main concepts in cognitive therapy, questioning one's way of thinking may be more difficult for some individuals (e.g., patients with cognitive impairment, some patients with lower education or reduced introspection capacity). The main implication for treatment may be to remain very concrete and use many practical examples. The amount of time devoted to cognitive interventions, both within a given session and in relation to the multifaceted therapy for insomnia, may also need to be adapted to each patient's capacity and acceptance. It is better to change one unhelpful belief at a time, making sure that the point is well understood, rather than risk losing the patient with too much information.

On the other hand, some patients may not be receptive to this type of intervention, or may be reluctant to question and monitor their beliefs and attitudes. It is important to verify whether such reluctance is due to a resistance to consider psychological factors as potential contributing factors to insomnia, or to a lack of insight into one's problem. Once the nature of the difficulty has been identified, it is important to work it through with the patient. Sometimes it may be necessary to take a step back and re-examine the conceptual model of insomnia. It may also be useful to revise the possible causes of insomnia, with an emphasis on the role of unhelpful thoughts and beliefs in the etiology of maladaptive behaviors and negative emotions which serve to maintain insomnia. Many patients are convinced that their insomnia problem is the result of a physical disorder such as a chemical imbalance. The idea is not to try to convince patients that there is no biological cause to their sleep difficulty, but rather to help them understand that there are usually several causes to insomnia and that they can have an active role in controlling some of them – namely, the psychological factors. In addition to verbal interventions, planning behavioral experiments to directly test the validity of some unhelpful beliefs may be quite effective. Such experiments can be presented as a “test” for patients to conduct by themselves in order to discover how some of their thoughts are directly related to their sleep difficulty [9].

Formal cognitive therapy may not always be necessary, as didactic teaching about good sleep practices, sleep requirements, and the impact of insomnia may be sufficient to correct erroneous beliefs. For instance, presenting the negative effects of excessive daytime napping, or of spending too much time

in bed on the circadian system, may be sufficient to change the patients' perceptions regarding the usefulness of these strategies, and consequently encourage them to change these maladaptive behaviors. When working with older adults, topics that should be carefully addressed, and perhaps considered as a standard theme, are the age-related changes in sleep architecture and their consequences on the experience of sleep. This educational intervention may sometimes be sufficient to modify beliefs about unrealistic sleep standards based on younger years' sleep and individual differences in sleep duration requirements.

PROOF OF CONCEPT/SUPPORTING DATA

There is increasing evidence that some sleep-related beliefs may be instrumental in perpetuating or exacerbating insomnia. Not surprisingly, cognitive therapy has become a standard therapeutic component in most multi-component approaches to treating insomnia [10]. Cognitive therapy is considered a critical therapy component for successful insomnia treatment outcomes [10,11] and for long-term maintenance of sleep improvements following therapy [12,13]. Although there has been no direct evaluation of the unique contribution of cognitive therapy to overall treatment efficacy, one open clinical trial has evaluated the contribution of a different version of cognitive therapy relative to that described in the present chapter [14]. The results of that study have been very promising, although they need replication due to the small sample size and uncontrolled study design. There is currently one large multi-center randomized clinical trial examining the unique contribution of cognitive therapy relative to its behavioral counterpart and the full cognitive behavior therapy (Morin and Harvey, in progress).

REFERENCES

- [1] C.M. Morin, *Insomnia: Psychological Assessment and Management*, Guilford Press, New York, NY, 1993.
- [2] C.M. Morin, C.A. Espie, *Insomnia: A Clinical Guide to Assessment and Treatment*, Kluwer Academic/Plenum Publishers, New York, NY, 2003.
- [3] A.T. Beck, J.A. Rush, B.F. Shaw, G. Emery, *Cognitive Therapy of Depression*, Guilford Press, New York, NY, 1979.
- [4] J.S. Beck, *Cognitive Therapy: Basics and Beyond*, Guilford Press, New York, NY, 1995.
- [5] L. Bélanger, J. Savard, C.M. Morin, Clinical management of insomnia using cognitive therapy, *Behav. Sleep Med.* 4 (2006) 179–202.
- [6] C.E. Carney, J.D. Edinger, R. Manber, et al., Beliefs about sleep in disorders characterized by sleep and mood disturbance, *J. Psychosom. Res.* 62 (2007) 179–188.
- [7] C.E. Carney, J.D. Edinger, Identifying critical beliefs about sleep in primary insomnia, *Sleep* 29 (2006) 444–453.
- [8] C.M. Morin, A. Vallières, H. Ivers, Dysfunctional beliefs and attitudes about sleep (DBAS): validation of a brief version (DBAS-16), *Sleep* 30 (2007) 1547–1554.

- [9] M. Ree, A. Harvey, Insomnia, in: J. Bennett-Levy, J. Butler, M. Fennell, et al., (Eds.), *Oxford Guide to Behavioural Experiments in Cognitive Therapy*, Oxford University Press, New York, NY, 2004.
- [10] C.M. Morin, R.R. Bootzin, D.J. Buysse, et al., Psychological and behavioral treatment of insomnia: update of the recent evidence (1998–2004), *Sleep* 29 (2006) 1398–1414.
- [11] J.D. Edinger, C.E. Carney, W.K. Wohlgemuth, Pretherapy cognitive dispositions and treatment outcome in cognitive behavior therapy for insomnia, *Behav. Ther.* 39 (2008) 406–416.
- [12] J.D. Edinger, W.K. Wohlgemuth, R.A. Radtke, et al., Does CBT alter dysfunctional beliefs about sleep? *Sleep* 24 (2001) 591–599.
- [13] C.M. Morin, F. Blais, J. Savard, Are changes in beliefs and attitudes about sleep related to sleep improvements in the treatment of insomnia? *Behav. Res. Ther.* 40 (2002) 741–752.
- [14] A.G. Harvey, A.L. Sharpley, M.J. Ree, et al., An open trial of cognitive therapy for chronic insomnia, *Behav. Res. Ther.* 45 (2007) 2491–2501.

RECOMMENDED READING

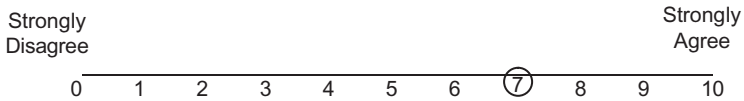
- J.S. Beck, *Cognitive Therapy: Basics and Beyond*, Guilford Press, New York, NY, 1995.
- L. Bédanger, J. Savard, C.M. Morin, Clinical management of insomnia using cognitive therapy, *Behav. Sleep Med.* 4 (2006) 179–202.
- C.M. Morin, *Insomnia: Psychological Assessment and Management*, Guilford Press, New York, NY, 1993.
- C.M. Morin, C.A. Espie, *Insomnia: A Clinical Guide to Assessment and Treatment*, Kluwer Academic/Plenum Publishers, New York, NY, 2003.

APPENDIX 11.1

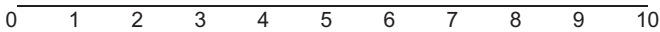
The Dysfunctional Beliefs and Attitudes about Sleep Scale

Dysfunctional Beliefs and Attitudes about Sleep

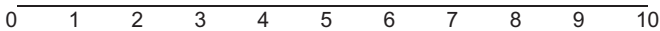
Instructions. Several statements reflecting people's beliefs and attitudes about sleep are listed below. Please indicate to what extent you personally agree or disagree with each statement. There is no right or wrong answer. For each statement, circle the number that corresponds to your own **personal belief**. Please respond to all items even though some may not apply directly to your own situation.



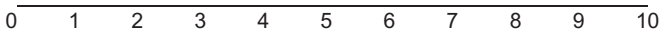
1. I need 8 hours of sleep to feel refreshed and function well during the day.



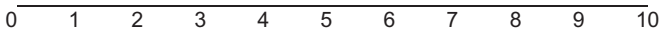
2. When I don't get proper amount of sleep on a given night, I need to catch up on the next day by napping or on the next night by sleeping longer.



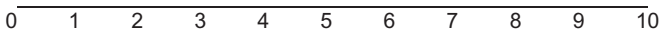
3. I am concerned that chronic insomnia may have serious consequences on my physical health.



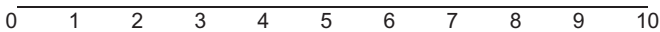
4. I am worried that I may lose control over my abilities to sleep.



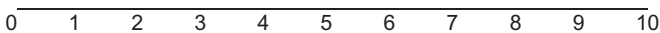
5. After a poor night's sleep, I know that it will interfere with my daily activities on the next day.



6. In order to be alert and function well during the day, I believe I would be better off taking a sleeping pill rather than having a poor night's sleep.



7. When I feel irritable, depressed, or anxious during the day, it is mostly because I did not sleep well the night before.



8. When I sleep poorly on one night, I know it will disturb my sleep schedule for the whole week.

