

Intervention to Reduce Unhelpful Beliefs about Sleep

Allison G. Harvey, Polina Eidelman

Golden Bear Sleep and Mood Research Clinic, Psychology Department, University of California, Berkeley, CA

PROTOCOL NAME

Intervention to reduce unhelpful beliefs about sleep.

GROSS INDICATION

This intervention is an approach to challenging unhelpful beliefs about sleep and developing/testing new (and helpful) beliefs about sleep.

SPECIFIC INDICATION

There is no evidence that this form of therapy is differentially effective for subtypes of insomnia.

CONTRAINdications

The Fear of Poor Sleep experiment may involve some short-term sleep deprivation. As such, this experiment should not be attempted with patients who will need to drive, operate a machine/industrial tool, or engage in other activities the day following the experiment if these activities, attempted under conditions of sleep deprivation, would compromise the safety of the patient or other people entrusted to the patient.

RATIONALE FOR INTERVENTION

Unhelpful beliefs about sleep held by patients with insomnia relate to the amount of sleep required (e.g., “I must get 8 hours of sleep most nights”, “If I have to get up to go to the bathroom my night’s sleep is wrecked”), fear of the short- and long-term consequences of insomnia (e.g., “After a poor night’s sleep, I know that I’ll find it impossible to cope at work the next day”, “This is having

serious effects on my physical health”), and the belief that it is possible to lose control over one’s ability to sleep (e.g., “When I have trouble getting to sleep, I should stay in bed and try harder”, “I’ll go to bed early to ensure I get at least some sleep”, “I must actively control my sleep”). The Dysfunctional Beliefs about Sleep Scale (DBAS) [1] is a useful aid for identifying unhelpful beliefs about sleep. The approach to challenging unhelpful beliefs described here makes use of behavioral experiments (for the rationale for this approach, see Chapter 7).

STEP BY STEP DESCRIPTION OF PROCEDURES

There is an enormous variety of unhelpful beliefs about sleep held by patients with insomnia. Hence, while some of the most commonly used behavioral experiments for tackling beliefs are described below, it is emphasized that these experiments should be individualized for each patient, and new experiments should be devised for other beliefs held by your patients. Several of these experiments have also been described elsewhere [2].

Each experiment is described in terms of seven “set up” steps (see Chapter 7 for the steps involved in devising each experiment).

Example 1: Daytime Fatigue

1. Precisely identify the belief/thought/process the experiment will target.

A common belief held by patients with insomnia is that “I have a fixed pot of energy that I must conserve. It progressively drains away throughout the day. The only way I can top up my energy is via sleep.”

You may introduce this experiment and help patients identify this belief by asking them what they typically do and avoid doing during a day that follows a night of insomnia. Approaches to conserving energy commonly used by patients with insomnia include engaging in mundane activities such as paperwork and data entry, and avoiding meetings and socializing. Note that while these coping strategies may initially make a lot of sense, they can actually lead to feeling more tired, and contribute to the day being unpleasant, boring, and unproductive. Furthermore, it probably contributes to increased stress (because important activities in the day were avoided) and worry (there will be fewer distractions from worry), which may further impede sleep, hence contributing to a vicious cycle.

2. Collaborate with your patient to brainstorm ideas for an experiment. Be as specific as you can.

The key to this experiment is for the patient to compare and contrast conserving and using energy. There are many variants on this experiment, but one that seems to work particularly well is to conduct the experiment over 2 days. On the first day, the patient spends one 3-hour block conserving energy, and then a 3-hour block using energy. The following day they do this again, but in the reverse order. Prior to the experiment,

through careful questioning, try to understand exactly what conserving energy means for your patient. Also, spend time brainstorming strategies for using energy. These might include going for a 10-minute walk, returning all phone calls, arranging to have a coffee with a colleague, getting on top of paperwork, going to the water cooler to get a drink, and walking to a local shop to buy a magazine or snack.

3. Write down predictions about the outcome and devise a method to record the outcome.

Typically, the prediction made by patients with insomnia will be that “after a poor night’s sleep, I will cope better and feel less fatigued and moody if I conserve my energy”.

Measurement method: After each 3-hour block, the patient rates their fatigue, mood, and coping on a 0 (“not at all”) to 10 (“very much”) scale. In addition to measuring specific aspects of functioning or mood, encourage your patient to note what they have learned from the experiment.

4. Anticipate problems and brainstorm solutions.

The patient may not know or only have a vague idea how to engage in using energy – so very clearly define and discuss. Get super specific. To increase the chance that your patient will do the experiment over the coming week, it may be useful to plan the specific time when it will be done. To increase the chance that your patient will do the experiment over the coming week, it may be useful to plan the specific time when it will be done and to practice specific skills for using/generating energy in the session.

5. Conduct the experiment.

6. Review the experiment and draw conclusions. Write down the conclusions.

Typically, a patient with insomnia will discover that there may be other factors than sleep that influence energy levels, and that mood and energy are improved by “using” energy. In other words, “using” energy becomes synonymous with “generating” energy.

We often then develop a new metaphor with that patient – that energy levels are like elastic; they can be stretched quite easily. This is in contrast to their original view that energy levels progressively deplete throughout the day (like a leaky battery). To conclude the experiment, it is often useful to generate a list of ways to decrease the adverse effects of poor sleep through energy generation. Patients may benefit from preparing a list that works in the different contexts of their life (workplace energy generating, weekend energy generating, working from home, etc.).

Example 2: Poor Sleep is Dangerous

A belief commonly held by patients with insomnia is that poor sleep is dangerous. This belief needs to be pulled out by the roots. It is only then that fewer episodes of tiredness will be noticed. Patients will always feel somewhat tired unless we deal with the belief, because they’ll always be monitoring

for/watching out for tiredness and then, of course, they'll notice it more. Accordingly, a behavioral experiment can be conducted to show that poor sleep is not dangerous. This is also an opportunity to practice new skills for managing the consequences of not sleeping. This experiment works best toward the latter part of treatment, when the patient has learned and practiced a number of effective coping strategies for the day. Additionally, for patients who have experienced a significant improvement in their sleep, this experiment may be conceptualized as a sort of celebration and a way to prove to themselves that they do not need to be fearful of a night of poor sleep.

It's often helpful to explain the fact they have done the experiment by accident on several occasions. The reason for doing it more formally is that these accidental experiments are often easily forgotten, or can be attributed to flukes or the particular circumstances in which they occurred.

It is very important that patients feel you are with them and right behind them, so it can be helpful to phone them to review the experiment the evening before – this can be brief and focused. It will be hard *not* to do the experiment if you are going out of your way in this manner. You could also call them in the morning to remind them how to cope with a poor night of sleep.

1. Precisely identify the belief/thought/process the experiment will target.

A belief commonly held by patients with insomnia is that “to function well the next day, I must get at least 8 hours of sleep a night. Less than 8 hours of sleep will have serious consequences for my health. If I don’t get 8 hours sleep per night, I won’t be able to cope with anything.”

2. Collaborate with your patient to brainstorm ideas for an experiment. Be as specific as you can.

The experiment usually works well when sleep is kept to about 1–1.5 hours less on the night of the experiment compared to a usual night of sleep. It is fine to be flexible with this amount. However, be mindful of the patient’s anxiety in response to the suggested sleep restriction – this anxiety is a manifestation of the exact belief targeted by the experiment, and is a useful point to which you should draw the patient’s attention. Collaboratively, you might decide to sleep just 6.5 hours one night. Specify whether this will involve going to bed later than usual or waking up earlier in the morning. Discuss how to stay awake later or how to wake up earlier in the morning. Try to select activities that will ensure that the experiment is enjoyable and memorable (for example, watching a movie with family, walking the dog, playing a musical instrument, getting up early to go for a swim, etc.).

3. Write down predictions about the outcome and devise a method to record the outcome.

The predictions often include some version of the following: “I won’t cope, I’ll feel awful, low, sick, tired, and I won’t want to do anything or see anyone. If I aim to sleep for only 6.5 hours I’ll end up sleeping much less. If I have 1 night of poor sleep this will trigger others.”

In order to assess the predictions, develop a form to help patients monitor the effect of the experiment on their ability to cope, tiredness, productivity, and mood. Also, patients should continue to complete the sleep diary each morning immediately on waking.

4. Anticipate problems and brainstorm solutions.

If patients are anxious about trying this experiment, capitalize on their past experiences – for example, ask “Have there been times when you have slept less than 8 hours and gotten on with the day OK?”, “Have there even been times when you have had a poor night’s sleep and actually had a good day?”, “What did you make of these times?”. Often the patient will discount these experiences. This is then an opportunity to say, “OK, so you’ve noticed that you can get away with X hours sleep and feel OK but this may have been due to X, Y, and Z, so the only way you can really know what this means is if you actively choose to have less than 8 hours sleep”. In other words, it can be helpful to begin by recruiting a past experience that doesn’t fit with their belief (if I sleep poorly it’s a disaster, I find it so hard to cope) and is consistent with an alternative belief (if I sleep poorly I might feel rotten but cope OK). This helps sow the seeds of doubt that the belief is correct.

You should also generate a list of effective daytime coping strategies collaboratively with your patient. This can serve as a reminder during the day following the night of “poor sleep”. Additionally, it may be useful to remind patients that the hour they will be cutting from their night can be used as a time for pleasurable activities that they might otherwise not have time to do.

5. Conduct the experiment.

6. Review the experiment and draw conclusions. Write down the conclusions.

Patients are typically surprised by how well they cope with 6.5 hours sleep, and they get to discover that restricted sleep does not necessarily trigger poor sleep on subsequent nights. When reviewing the experiment, it is important to spell out the take away message – poor sleep might be unpleasant, but it is not dangerous and it is definitely something with which the patient can cope. Remind patients that this experience is an important one to remember. This is a night where they chose to sleep “poorly” and still made it through the day, coping well. This is a helpful experiment for reducing the fear of poor sleep.

Table 8.1 depicts an example of a behavioral experiment that was completed with a patient who conducted the Fear of Poor Sleep experiment. This patient wanted to reduce his sleep to 5.5 or 6 hours. He concluded that one night of reduced sleep did mean he felt more tired but he coped. For this patient the Fear of Poor Sleep experiment was a celebration of his new-found confidence in his ability to sleep (as opposed to the significant fear of poor sleep he had felt previously).

TABLE 8.1 Fear of Poor Sleep Experiment

Record Sheet for Behavioral Experiments

Aim	The experiment (i.e., what you plan to do)	What do you predict will happen?	What actually happened?	Outcome
To purposefully have a shorter night's sleep	Either stay up later – watch stars, moonlit walk (1 am to bed) OR get up earlier and go for a run in the countryside. Aim for 5.5–6 hours of sleep (in bed for around 6.5 hours)	Might even sleep better? I'll feel fine in the morning. It'll be interesting to see	Went out to see friends. Back midnight. Watched film until 1:30 am Bed 1:45–7:45 Slept 2 am to 7 am (5 hours) one or two awakenings	Did feel tired on waking and at times during the day but functioned fine and coped okay – paperwork at desk, gardening odd jobs, saw friends. Can do it! Can survive okay on 5 hours!

Example 3: Control of Sleep

1. *Precisely identify the belief/thought/process the experiment will target.*
A common belief held by patients with insomnia is, “I am terrified of losing control over my ability to sleep. I have to try really hard to sleep and try to get control back over it.”
2. *Collaborate with your patient to brainstorm ideas for an experiment. Be as specific as you can.*
One example that has worked well is that on the first night the patient does everything he or she can to control sleep. On the second night, the patient drops all attempts to sleep.
3. *Write down predictions about the outcome and devise a method to record the outcome.*
A typical prediction is that “unless I try very hard to get to sleep and be perfectly still, I will have a night of insomnia”.
The sleep diary kept by the patient will indicate the amount of time it took to get to sleep and how long he or she was awake over the course of the night – these are useful outcome measures for this experiment. Additional outcome measures can be collaboratively developed with the patient.
4. *Anticipate problems and brainstorm solutions.*
Brainstorming the specifics of what a patient will do when trying to control sleep, and how he or she might drop these attempts at

controlling sleep, is a useful way to prevent obstacles. These will likely vary person to person, and it is important to outline them in some detail before the experiment is attempted.

5. Conduct the experiment.

6. Review the experiment and draw conclusions. Write down the conclusions.

Patients typically conclude that the more they try to control their sleep, the more out of control it is. So actively trying to control sleep makes it worse. This experiment is also a good basis for having a discussion about sleep being an automatic biological process that does not need to be controlled.

Example 4: Survey

The goal of this experiment is to broaden the patient's thinking about what constitutes "normal sleep". By administering a survey to a set of individuals who are close to the patient's age, the patient can gather data about the variety of sleep obtained by self-described good sleepers. Additionally, he or she may survey peers to gather ideas for coping strategies for the daytime and can begin to see that individuals without sleep difficulty often see their daytime mood and energy levels as being affected by many factors other than sleep.

Pre-session preparation: We suggest administering the DBAS [1] before this experiment is attempted. For all items rated as higher than halfway on the rating scale, prepare survey questions designed to help your patient to obtain corrective/helpful information. For example, if your patient believes that he or she must sleep 8 hours every night in order to cope the next day, you could include the following questions: "Do you regard yourself as a normal sleeper or someone with insomnia?" or "Each week, what is the typical number of hours of sleep that you get per night?" Also, go through your notes for the past few sessions to identify other unhelpful beliefs the patient holds. Prior to the session, prepare drafts of survey questions designed to tackle these.

1. Precisely identify the belief/thought/process the experiment will target.

Introduce this experiment by discussing with patients how they developed their ideas about sleep. Do they have some ideas about how good sleepers sleep? Do they have some curiosity about these ideas? Many individuals with insomnia are eager to learn more about the way other people sleep, and to approach this in a scientific manner. The key beliefs targeted by the survey will vary person to person, and will be based on the highly endorsed DBAS items. Some common unhelpful beliefs include:

- It's not normal to have difficulty with sleep.
- Most people sleep about 8 hours a night and wake up feeling bright and alert.
- It's not normal to feel tired and experience some lapses in memory and concentration at times during the day.

2. Collaborate with your patient to brainstorm ideas for an experiment. Be as specific as you can.

Design a survey collaboratively with your patient to address different beliefs and attitudes about sleep. Surveys are a great reminder as to how well good sleepers really sleep (i.e., the reality is that good sleepers have poor nights of sleep now and then, and they feel tired during the day at times). Often patients with insomnia have forgotten the realistic picture of what being a good sleeper is. You can also include questions asking about strategies that others use to increase their energy when they feel tired. In one recent experiment, we included questions about how other people coped with daytime tiredness. Many, many strategies were suggested, and only a small proportion of them involved resting or sleeping. In fact, most strategies suggested things like a change in environment, getting fresh air, going for a walk, drinking cold water, having a snack. The patient realized that energy can be increased by other things than rest and sleep, and that boredom was the biggest trigger to feeling tired. The above experiment can also be very helpful for eliciting reasons for daytime tiredness that are not sleep-related. Answers might include that work is boring, and that everyone gets tired in the afternoon.

Questions might include:

- How long, on average, does it take you to fall asleep?
- What would be the maximum time it takes you to fall asleep?
- How many hours of sleep do you think you need?
- How many hours of sleep do you actually get?
- Most people wake up in the night; how many times do you wake up, even if for a few seconds?
- Do you ever find it difficult to get back to sleep (after waking up)?
- Do you ever feel tired/lethargic when you wake up in the morning? Can you describe how you feel?
- Do you ever feel tired during the day? Can you describe this? What are some reasons why you might feel this way?

Typically, the patient will try to collect 10–20 responses and the therapist will try to collect some responses too. We always try to target people within 5 years of age either side of the patient's age (given sleep-related changes with age).

3. Write down predictions about the outcome and devise a method to record the outcome.

Ask your patient his or her predictions about what the responses will be. Before the next session, devise a form for collating the data from the survey experiment. In the session, show the patient the form for collating the data. Work together to collate the data for a couple of the completed questionnaires. Set the rest of the collation for homework. If there are only a small number of respondents, feel free to complete the collation in session. An example of a collated survey, along with the associated conclusions (in bold), is included as Figure 8.1.

Sleep survey – results

1. How long, on average, does it take you to fall asleep (in minutes)?

0–10	11–20	21–30	31–40	41–50	51–60	61+
12	5	7		1	1	

Many people take a long time to fall asleep.

2. What would be the maximum time it takes you to fall asleep?

11–20	21–30	31–40	41–50	51–60	61–70	71–80	81+
5	3	1	2	6			7

3. How many hours of sleep do you think you need?

4	5	6	7	8	9	10
		4	8	7	4	1

4. How many hours of sleep do you actually get?

4	5	6	7	8	9	10
	1	2	11	5	1	

Average sleep was less than 8 hours.

5. If you got less than your ideal amount of sleep, how many hours could you get by with per night for two nights in a row?

3	4	5	6	7	8	9
2	4	8	10			

Average hours to get by with was 5 hours.

6. Do you think about sleep during the day?

Yes	No
5	14

7. Most people wake up at night. How many times do you wake up, even if for a few seconds?

0	1–2	2–3	3–4	4–5	5–6	7+
2	10	6	2	2	1	

Most people wake up during the night between one and three times.

8. Do you ever find it difficult to get back to sleep after waking up?

Yes	No
5	8

9. Do you ever have times in the day when you feel lethargic/tired?

Yes	No
23	3

How often does this happen?

Almost every day	Most days	After lunch	In the mornings	Occasionally
2 times/week	1 time/week	Early afternoon	Lunchtime	2 times/day

10. If you feel tired during the day, what strategies do you use to help you feel less tired?

Try to reinvigorate	Work	Keep busy	Motivate self	Walk
Sports	Keep going	Eat more	Drink tea, coffee, water	Power nap
Fresh air	Focus on work	Be active	Snack	

11. What things, other than lack of sleep, lead to feelings of tiredness for you?

Certain foods	Meal	Lack of food	Exercise	Low blood pressure
Worry	Work, stress, pressure	Dark, cold	Sitting in one place	Children
Driving	Problem solving	Heat	Junk food	Difficult work

FIGURE 8.1 An example of a collated survey.

4. Anticipate problems and brainstorm solutions.

Include a discussion about survey design more generally, covering things like the fact that your results will be more valid if the sample size is reasonable (the larger the sample, the less likely your results will be skewed by unusual responders), the importance of the age group of respondents (given that age influences sleep), and other sources of potential bias. This discussion not only educates the patient about how to collect valid data to make their mind up about important issues in their lives, but also sets up a basis for discussing the results (e.g., if there are a small number of respondents then you can remind the patient in the next session about the potential for bias). Be mindful of patients who have some anxiety about administering the survey to peers. To trouble-shoot this, you might problem-solve the reasons for this anxiety. For instance, if the patient does not want to ask friends to complete the survey in person, he or she might choose to set up an online survey, the link for which can be emailed to others. Alternately, the therapist may administer the bulk of the surveys to collect the data without triggering the patient's anxiety.

5. Conduct the experiment.**6. Review the experiment and draw conclusions. Write down the conclusions.**

The survey is likely to reveal that the majority of people get less than 8 hours of sleep; have some trouble with sleep when feeling stress; and feel tired when they wake up, and again after lunch. Most people have trouble sleeping at least some of the time. It is not realistic to expect 8 hours sleep every night. The patient's expectations of sleep and daytime tiredness are adjusted, and anxiety about attaining "perfect" sleep is reduced. Strategies for coping with poor sleep are generated.

PROOF OF CONCEPT/SUPPORTING DATA/EVIDENCE BASE

There is preliminary evidence that conducting a behavioral experiment, relative to a verbal approach, is more helpful in the context of insomnia [3]. There is no evidence on this specific approach as a monotherapy. Although there is no evidence on this specific approach as a monotherapy, evidence from an open trial suggests that behavioral experiments used as part of a multi-component approach to insomnia are effective [4]. However, we emphasize that testing within a randomized controlled trial is required.

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RECOMMENDED READING

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