

Cognitive Restructuring: Cognitive Therapy for Catastrophic Sleep Beliefs

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PROTOCOL NAME

Cognitive restructuring: cognitive therapy for catastrophic sleep beliefs.

GROSS INDICATION

- Excessive focus on thoughts/beliefs pertaining to the potential catastrophic consequences of sleep continuity disturbance and/or sleep loss;
- Obvious and large probability overestimates regarding the potential catastrophic consequences of sleep continuity disturbance and/or sleep loss.

SPECIFIC INDICATION

To date, there is no evidence to suggest that this form of therapy is differentially effective for one or another type of insomnia (psychophysiologic vs idiopathic vs paradoxical insomnia) or for any of the phenotypes/subtypes of insomnia (initial vs middle vs late insomnia).

CONTRAINDICATIONS

While there is no evidence to show “where and when” this form of therapy is contraindicated, it stands to reason that this treatment modality may not be

useful, or may be complicated, in the following cases:

- Patients who do not exhibit an excessive focus on thoughts/beliefs pertaining to the potential catastrophic consequences of sleep continuity disturbance and/or sleep loss (**NOTE:** It may not be evident that a patient has such thoughts/beliefs until one engages in the exercise that lies at the heart of this protocol)
- Patients who have experienced severe life experiences that they attribute to their insomnia (e.g., an accident that involved severe injury or loss of life)
- Patients with cognitive impairment due to brain injury, dementia, or other illnesses that may interfere with their ability to engage in a cognitive intervention.

RATIONALE FOR INTERVENTION

There is no doubt that theorists and therapists differ about the role of cognition as a precipitating and/or perpetuating factor for chronic insomnia. Some suggest that cognitive factors are critical (e.g., serve to trigger abnormal attentional processes or counterproductive effort behaviors). Others argue that such factors serve to exacerbate insomnia, but are not primary (e.g., patients with chronic insomnia are not awake because they are worrying, but instead are worrying because they are awake). Still others may take the position that cognitive factors are simply epiphenomenon (e.g., insomnia occurs in association with behavioral factors and conditioning, period). If one subscribes to the first or second of the above positions, then attention to cognitive factors is warranted, and all that is required is a determination regarding whether this particular form of Cognitive Therapy (CT) is useful. As noted above, this form of therapy is likely to be useful with patients who exhibit an “excessive focus on thoughts/beliefs pertaining to the potential catastrophic consequences of sleep continuity disturbance and/or sleep loss”.

STEP BY STEP DESCRIPTION OF PROCEDURES

There are essentially eight steps to the process:

1. Introduce the exercise
2. Calculate how long the patient has had their insomnia (in days)
3. Identify and record 3–10 catastrophic thoughts
4. Assess and record the patient’s probability estimates
5. Determine the actual frequency of occurrence of the anticipated “catastrophes”
6. Calculate the frequency rate that corresponds to the certainty estimate
7. Discuss with the patient how it is that one is prone to such overestimates
8. Set a countering “mantra”.

Each of these stages is explicated below.

Introduce the Exercise

How the exercise is introduced is, in part, dependent upon the centrality placed upon CT. In the treatment regimen laid out by our group [1], this component is delivered during the second half of treatment and is explained as an exploration of a factor that is thought to be “wind to the flame” (i.e., how one thinks about insomnia may make it worse). Regardless of when the procedure is introduced, when undertaking this exercise with a patient it needs to be introduced in a considerate way – one that avoids any hint that the therapist is being pedantic or patronizing. This caveat is proffered based on the concern that it is easy to slip into a haughty role when one knows the answer to a question ... or, perhaps more aptly, when one is accustomed to probabilistic thinking and making judgments on the basis of sampled evidence. One possible way to introduce the exercise is as follows.

Therapist: As you may have noticed, the work we’ve done to date doesn’t much address the role of worry in insomnia. I know that some folks think that being a worrier is what causes insomnia ... and this may be so early on ... But once the insomnia is chronic, our sense is that the disorder continues not so much because of worry, but rather because of the other factors that we have talked about. That is, the mismatch between sleep ability and sleep opportunity that comes from extending sleep opportunity (going to bed early, sleeping in, and napping during the day). And it seems that we have made some real distance by focusing our efforts on these issues. [This is a good time to pull out the graphs and review them with the patient.] But the fact is, worry is not irrelevant. In the context of chronic insomnia, it can be “gas to the fire” or “wind to the flame”. In the case of both of these analogies ... they make the point that neither wind nor gas started the fire, but they sure can make things worse. So today I want to spend the session focused on this issue and have you play a game with me. It’s a bit of a silly game, but I think when we’re done, the point of the game won’t be lost on you.

Calculate How Long the Patient has had Their Insomnia (in Days)

This first step only requires asking patients to estimate how long they have had their insomnia. While this information is likely to have been acquired during the initial evaluation, if it wasn’t then this step may be complicated by a patient’s unwillingness to give a “hard number”. Often when asked, the patient will simply say that he or she has had insomnia “forever”. In this instance, it may be useful to do a brief biographical assessment. That is, “tell me of a vivid memory when you were 4, 10, in Elementary School, in Junior High, in High School, in College, during your first job as a _____, when you first got married, when

you had your first child, etc.”. Once a life event anchor is had for each time period, the therapist can then query, per event, “when you _____ did you have trouble sleeping then?” Once a date is established, all that is required is that duration of the insomnia be calculated in terms of days and recorded (ideally on a whiteboard or on a sheet of paper that can be viewed by both the therapist and the patient). Calculating the number of days can, and should be, done conservatively. If the patient has had insomnia for 10 years, this translates to 3650 days. This assumes, however, that insomnia occurs on a nightly basis. This is unlikely, and this represents an ideal time to query the patient about frequency of insomnia per week. Data from the sleep diaries may also be used to address the point. Regardless of how it is decided, the final number should reflect that insomnia does not occur nightly. If it is decided, for example, that 5 days per week is more accurate, then the final assessment will be closer to 2600 days.

Identify and Record 3–10 Catastrophic Thoughts

There are two parts to this component of the exercise: first, eliciting material (thoughts) from the patient; and second, if necessary, helping the patient to unmask the underlying catastrophic thought. Eliciting thoughts can be done as follows:

Therapist: Settle back in your chair a bit. Maybe close your eyes and imagine you’re in bed. Think back to a time before you sought out treatment. You’ve been lying in bed for 30 minutes – maybe more. What thoughts pop into your head when you’re thinking “If I don’t fall asleep, tomorrow I’ll _____? Fill in the blank ... “If I don’t fall asleep, tomorrow I’ll _____...”

Unmasking the underlying catastrophic thought is required when the patient provides a thought that is not only relatively benign but is also a high probability event (“tomorrow I’ll feel tired”). The task then is for the therapist to get the patient to associate from the given thought to the related/derivative catastrophic thought. One way to do this is to set up a “T” chart on a whiteboard where the therapist lists the initial-antecedent thought (I’ll be tired) on the left side of the board and encourages the patient to “continue with that line of thought” towards other potential consequences (“I’ll be so tired that I’ll *wreck my car*”). Table 12.1 provides some typical “antecedent” and “consequent” type statements.

Assess and Record the Patient’s Probability Estimates

Assessing patients’ sense of certainty requires that they tell you how certain they are in terms of percentages (0 percent certain to 100 percent) regarding each catastrophic event. For example:

Therapist: Your first example was “If I don’t fall asleep, tomorrow I’ll wreck my car”. At the time you thought this ... lying awake

TABLE 12.1 Common Worries and Catastrophic Thoughts

If I Don't Get Enough Sleep Tonight Then ...	
Worry	Associated Catastrophic Thought
I'll be irritable and short with my wife	My wife will leave or divorce me
I'll be irritable and short with my kids	My kids will hate me – never speak to me again
I won't socialize well	I'll lose my friends
I'll do poorly at work	I'll be fired
I'll make a mistake at work	I'll kill someone
I'll make a mistake at work	I'll be sued
I'll be fired	I'll be ruined financially
I'll feel poorly	I'll get sick
I'll get sick	I'll die
I'll lose my mind	I'll go crazy – have a nervous breakdown
I won't fall asleep	I'll be awake all night
I'll fall asleep behind the wheel (or space out)	I'll total my car
I'll have an accident	I'll wreck my car and kill myself or someone else
I'll look old and unattractive	People will turn away from me in disgust

in the middle of the night ... and you heard in your head “If I don’t fall asleep tomorrow I’ll wreck my car” ... At that moment, how certain were you that this would happen?

Often the patient will provide very high certainties (100 percent, 99 percent, etc.). While these high estimates may accurately represent the patient’s feeling at the time, the exercise works better if the therapist uses more conservative estimates *and makes it clear to the patient that he or she is “rounding down”*. Rounding down will leave the patient with the impression that the probability estimates revealed during the exercise, high as they may be, are still lower than those that occur when experiencing insomnia.

Therapist: So in the middle of the night you are 95 percent certain that if you don’t fall asleep, you’ll wreck your car. That’s very certain! Let’s round this to 90 percent ...

Determine the Actual Frequency of Occurrence of the Anticipated “Catastrophes”

Determining the frequency of occurrence requires that the therapist queries, by each item, the number of times each of the catastrophic events occurred. This can be tricky to the extent that the therapist is unaware that a catastrophic event may indeed have occurred (e.g., a school bus driver had an accident ascribed to fatigue/sleepiness where there was a loss of life). Ideally, such information should be discovered during the initial interview and a judgment about whether to deploy this form of cognitive therapy made *before* the exercise is begun. This said, for the purposes of this summary (and in keeping with the running example), let’s say the patient reports having one car accident in 10 years, though they’re not entirely sure it was related to fatigue or sleepiness.

Calculate the Frequency Rate that Corresponds to the Certainty Estimate

This step requires that the therapist calculates (or, better yet, has the patient calculate) the number of instances each event should have occurred, given the number of opportunities (days of insomnia) and the patient’s certainty estimates (Table 12.2 provides an example). This step is the “A-ha!” step, and should be delivered with care. For example:

Therapist: Here comes the game aspect to this exercise. One way of thinking about and judging the reasonableness of one’s certainties is to see how well they match “the facts”. To do this we need to compare the actual occurrences of the events we’ve listed here with how often they should have happened, given your level of certainty and the number of opportunities you have had for the events to have occurred.

TABLE 12.2 Cognitive Restructuring
Number of Days with Insomnia 1500

1	2	3	4
Event	Certainty When Lying Awake and Unable to Sleep	No. of Event Occurrences	No. of Event Occurrences Given Certainty
Stay awake all night	85%	1	1200
Wreck the car	80%	2	1200
Be fired	90%	0	1300

Let's start with *wrecking your car*. If you've had insomnia for 2600 nights and your certainty about the possibility of wrecking your car was reasonable, you'd have experienced it on 90 percent of the occasions when you've had insomnia ... so that would be 0.90×2600 , or 2340 times. Hmm – let's call it 2300 times. So ... how many times have you wrecked your car? Once. Not 2300 times. Not 500 times. Once. And even in this instance, you're not completely ready to say it happened because of the insomnia.

So here's the interesting bit – somehow when you're lying in bed it seems reasonable to think, and to be very certain of the factualness of it, that it's likely “that you'll wreck your car” when your experience tells you otherwise. Your experience tells you that this is actually a “low probability event” – in fact, an unbelievably low probability event.

As part of the exercise, it would be useful to calculate (or have the patient calculate) the actual probability. In the present example, given the number of occurrences to date (1) and the number of opportunities (2600), the probability is closer to 0.04 percent.

Discuss with the Patient How it is that One is Prone to Such Overestimates

At this juncture, the patient should be oriented, and in as many ways as possible, to the paradox that at night things may seem certain, but that in the clear light of day such certainties seem improbable, if not downright foolish. This can lead to a discussion of the effects of sleep loss and circadian phase on brain function and/or logical thought, and how we're all vulnerable to irrational thinking in the middle of the night ... or, as we tend to say in therapy, “*it's a bad thing to be awake when reason sleeps*”.

Set a Countering “Mantra”

The final step is to provide patients with a tool (a mnemonic) so that they might recall this session when prone to worry at night. To accomplish this, we recommend setting a countering mantra. For example:

Therapist: Bottom line – when you are having trouble falling asleep and you start thinking the “If I don't fall asleep I may ...”, it helps to remember in that moment when you think, “I may...” to counter with “I may not ... in fact it's downright unlikely that I may ...” In fact, just thinking “*not likely*” when you have catastrophic worries is helpful. We like to refer to this as a countering “mantra” – a thing that you can say in your head that will remind you of this exercise.

POSSIBLE MODIFICATIONS/VARIANTS

To date, no modifications or variants for this kind of cognitive restructuring have been developed for use with patients with chronic insomnia.

PROOF OF CONCEPT/SUPPORTING DATA/EVIDENCE BASE

Cognitive restructuring is a core form of therapy for CBT for depression and anxiety and panic disorders. Some years ago we recommended that this form of therapy could be applied to the treatment of sleep-related worry [1]. While there are no efficacy or effectiveness studies on this specific approach as a monotherapy, there are effectiveness data related to its use as part of multi-component therapy. Moreover, its effectiveness in the related disorders and its clear clinical utility in the treatment of insomnia suggest that this is an important component to include in CBT-I.

REFERENCE

- [1] M. Perlis, C. Jungquist, M. Smith, D. Posner, *Cognitive Behavioral Therapy for Insomnia: A Session by Session Guide*, Springer Press, New York, NY, 2005, pp. 89–96.

RECOMMENDED READING

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