Interpreting Factors: Beliefs and Associations
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I. Hex of Insomnia (Garrison)

<table>
<thead>
<tr>
<th>regulating</th>
<th>interfering</th>
<th>interpreting</th>
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<tbody>
<tr>
<td>A. circadian rhythms</td>
<td>C. arousal</td>
<td>E. beliefs</td>
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<tr>
<td>B. homeostat</td>
<td>D. lifestyle</td>
<td>F. associations</td>
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II. Sleep Interfering Processes and Sleep Interpreting Processes (Lundh & Broman, 2000)

III. Poor sleepers compared to good sleepers (Chambers & Keller, 1993)
   A. overestimate sleep latency
   B. overestimate sleep duration
   C. underestimate sleep duration
   D. complain more of fatigue
   E. demonstrate no MSLT difference
   F. exhibit similar increase in sleepiness after deprivation

IV. Classical Conditioning in insomnia
   A. Stimulus Control (Bootzin, 1972)
   B. performance failure > arousal
   C. PPP Model (Spielman & Glovinsky, 1991)
   D. a sub-type of psychophysiological insomnia
      i. sleep onset difficulties
      ii. evening drowsiness or sleep prior to bed
      iii. good sleep in a different bed or location
V. Beliefs (Morin, 1993)

A. Mistaken Beliefs About Sleep
   i. misconceptions about the causes of insomnia
   ii. misattributions or amplification of its consequences
   iii. unrealistic expectations
   iv. control and predictability of sleep
   v. faulty beliefs about sleep promoting practices

B. Dysfunctional Beliefs About Sleep Scale
   i. 30, 16, & 10 item forms
   ii. DBAS – 16 factors
      a) Consequences of Insomnia = items 5, 7, 9, 12, 16
      b) Worry/Helplessness = items 3, 4, 10, 11, 14
      c) Unrealistic Expectations = items 1, 2
      d) Medication = items 6, 13, 15
   iii. Carney & Edinger, 2006 (30 item DBAS)
      a) 16 items differentiated insomnia sufferers from good sleepers
         1. I can’t ever predict whether I’ll have a good or poor night’s sleep.
         2. I get overwhelmed by my thoughts at night and often feel I have no control over my racing mind.
         3. I am worried that I may lose control over my abilities to sleep.
         4. When I have a good night’s sleep, I know that I will have to pay for it on the following night.
         5. I feel insomnia is ruining my ability to enjoy life and prevents me from doing what I want.
         6. When I feel tired, I have no energy, or just seem not to function well during the day, it is generally because I did not sleep well the night before.
         7. I have little ability to manage the negative consequences of disturbed sleep.
         8. I am concerned that chronic insomnia may have serious consequences for my physical health.
         9. When I feel irritable, depressed, or anxious during the day, it is mostly because I did not sleep well the night before.
        10. My sleep is getting worse all of the time, and I don’t believe anyone can help.
        11. Because my bed partner falls asleep as soon as his or her head hits the pillow and stays asleep through the night, I should be able to do so too.
        12. I feel I can still lead a satisfactory life despite sleep difficulties.
        13. When I sleep poorly on one night, I know it will disturb my sleep schedule for the whole week.
        14. In order to be alert and function well during the day, I am better off taking a sleeping pill rather than having a poor night’s sleep.
        15. It usually shows in my physical appearance when I haven’t slept well.
        16. I am sometimes afraid of dying in my sleep.
      b) 8 items showed significantly greater changes in response to CBT-I
         1. When I have trouble getting to sleep, I should stay in bed and try harder.
         2. I am worried that I may lose control over my abilities to sleep.
         3. I need 8 hours of sleep to feel refreshed and function well during the day.
         4. After a poor night’s sleep, I know that it will interfere with my daily activities on the next day.
         5. When I feel irritated, depressed, or anxious during the day, it is mostly because I did not sleep well the night before.
         6. By spending more time in bed, I usually get more sleep and feel better the next day.
         7. When I don’t get a 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.
         8. I can’t ever predict whether I’ll have a good or poor night’s sleep.
      c) Declining scores on these 15 items were related to 1 or more indices of clinical improvement
         1. I believe insomnia is essentially the result of a chemical imbalance.
         2. I get overwhelmed by my thoughts at night and often feel I have no control over my racing mind.
         3. I am worried that I may lose control over my abilities to sleep.
         4. I feel insomnia is ruining my ability to enjoy life and prevents me from doing what I want.
         5. I need 8 hours of sleep to feel refreshed and function well during the day.
         6. My sleep is getting worse all of the time, and I don’t believe anyone can help.
         7. Medication is probably the only solution to sleeplessness.
         8. When I sleep poorly on one night, I know it will disturb my sleep schedule for the whole week.
         9. When I feel irritable, depressed, or anxious during the day, it is mostly because I did not sleep well the night before.
        10. I have little ability to manage the negative consequences of disturbed sleep.
        11. When I have trouble getting to sleep, I should stay in bed and try harder.
        12. I have little ability to manage the negative consequences of disturbed sleep.
        13. When I have a good night’s sleep, I know that I will have to pay for it on the following night.
        14. Without an adequate night’s sleep, I can hardly function the next day.
        15. I feel that insomnia is basically the result of aging, and there isn’t much that can be done about this problem.
VI. Cognitive Model (Harvey, 2002): “...cognitive processes operate to trap the individual into becoming progressively more absorbed by and anxious about the sleep problem. The key cognitive processes implicated are attention, perception, counterproductive safety behaviours, and erroneous beliefs. These processes fuel the excessive negatively toned cognitive activity and the associated arousal and distress. The unfortunate consequence of this sequence of events is that the excessive and escalating anxiety may culminate in a real deficit: excessive and increasingly catastrophic worry, physiological arousal and high levels of distress are conditions under which sleep onset is unlikely and daytime functioning may be impeded (p. 873).”

VII. Cognitive Model Research

A. Monitoring for Sleep Related Threat (Semler & Harvey, 2004)

i. n = 47 (23 male) meeting DSM-IV criteria for insomnia
ii. three groups
   a) monitoring group (n = 16): focus on internal body reactions
   b) no monitoring group (n = 16): focus on activities and tasks
   c) no instruction group (n = 15): no instruction
iii. Experimental day: 4 envelopes
   a) on awakening: ratings for previous night’s sleep
   b) 10:00 AM and 2:00 PM: rating for current sleepiness
   c) 6:00 PM: ratings of negative thoughts, safety behaviours, perceived functioning, current sleepiness
iv. Results
   a) monitoring group had significantly higher negative thoughts, number of safety behaviours, and daytime sleepiness compared to the no-instruction group
   b) the no monitoring manipulation was not successful in decreasing monitoring

B. Distorted Perception (Tang & Harvey, 2004)

i. n = 40 (26 female) meeting DSM-IV criteria for insomnia, randomly assigned to 2 groups
   a) Shown Discrepancy Group: trained to read actigraphy data and compare it to sleep diary data
   b) No Demonstration Group: trained to read actigraphy data
ii. SD group estimated sleep onset latency more accurately and reported less anxiety and preoccupation about sleep, supporting proposition that distorted perception of sleep serves to fuel anxiety and preoccupation with sleep.

VIII. Cognitive Model Therapy (Harvey, 2005; Harvey, Sharples, Ree, Stinson, & Clark, 2007)

A. Phase I: case formulation

![Diagram of cognitive model therapy](image-url)
B. Phase 2: reversing maintaining processes

i. Reduce worry and rumination
ii. Reduce attentional bias and monitoring
iii. Reduce unhelpful beliefs about sleep
iv. Reduce misperception
v. Reduce use of safety behaviours

C. Phase 3

i. consolidate treatment gains
ii. goals for continued progress
iii. prevent relapse

IX. Key Concepts

A. Classical Conditioning
B. PPP Model
C. Performance failure → anxiety at bedtime
D. Hopelessness and helplessness about sleep
E. Monitoring for sleep related sensations
   i. daytime
   ii. night time
F. Safety Behaviors

References