If sleep is essential (and it is!) then so is research on sleep onset and insomnolence.

Normal sleep-onset cognition

Sensory imagery

Deactivation of higher cognitive processes

Hallucinations

More

Problem solving

Unpleasant thoughts

Measures of pre-sleep cognition

Sleep-onset latency and insomnia are associated with

“Pre-sleep cognitive activity in adults: A systematic review”

A. Nature of pre-sleep cognitive activity in good sleepers and those with insomnia

B. Pre-sleep cognition in insomnia

C. Cognitive strategies and their effects on sleep-onset latency and insomnia

D. Conclusion

Research recommendations

1. There is a need for integrative design-oriented (IDO) theories of the sleep onset control system (“SOCs”), to explain normal sleep onset and “insomnolence” (see Notes).

2. Theories of insomnia should be grounded in IDO theories of the SOCS.

3. The construct validity of the concepts of “arousal” and “cognitive arousal” is doubtful; consider replacing them with IDO concepts.

4. Other significant folk psychology strategies should be characterized in IDO theoretical terms and empirically investigated (e.g., counting sheep, listening to podcasts/radio).

5. New cognitive strategies should be derived from IDO theories of the SOCS, and investigated empirically.

1. The notion of integrative design-oriented (IDO) theory was not explicitly discussed in the target SMR paper. It was presented in Beaudoin et al (2019). It involves developing interdisciplinary, multi-scale models of multiple and interacting human information processing (cognitive, affective, volitional, ancillary, etc) from the design stance of theoretical AI (which includes evolutionary and computational architecture-based theorizing). We claim SOCS theoretical concepts and propositions should be grounded in a (necessarily broader) IDO theory of mind. The paper did not delve into strategies that have not been explored empirically (e.g., listening to radio).

2. “Insomnolence” is difficulty falling asleep, whether in clinical insomnia or not.

3. Guided mental imagery – 3 studies

4. Unguided mental imagery (e.g., cognitive refocusing) – 4 studies

5. Hypnosis – 3 studies (small samples)

6. Suppression and distraction – 2 studies

SOME BENEFITS

1. Paradoxical intention – 11 studies

2. Articulatory suppression – 1 study (with cognitive psychology)

MIXED RESULTS

1. Guided mental imagery – 3 studies

2. Unguided mental imagery (e.g., cognitive refocusing) – 4 studies

3. Hypnosis – 3 studies (small samples)

4. Suppression and distraction – 2 studies

NO BENEFIT

1. Paradoxical intention – 11 studies

2. Articulatory suppression – 1 study (with cognitive psychology)

Notes


2. This infographic is Beaudoin, L.P. & Lefurgey-Smith, L. (2020) at Simon Fraser University https://summit.sfu.ca/item/19617