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Perspective

'Rest and Digest' Versus 'Flight or Flight': A Commentary on Arousal and Sleep in Non-Clinical Populations

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Increasingly in modern times workers are finding it difficult to shut down at night and go to sleep. Work-related demands can continue long into the night keeping a person awake instead of asleep and then there are the pressing anxieties relating to what the employee will face the next day, which can often wake a person in the middle of the night. In essence, the parasympathetic (rest and digest) and sympathetic (fight or flight) systems of the body are trying to operate in tandem when the body was not designed to function in this manner. Much of this population refuse to seek treatment as do not think their sleep problems are serious enough to need it [1]. For many, being sleep deprived may even be seen as a good thing as fits the profile of being a 'hard worker'.

For a long time reducing arousal is thought to play a key role in insomnia and other sleep-related problems [2]. Relaxation techniques are often given out to those struggling with insomnia as a way to help them sleep. Cognitive behavioural therapy has also been extensively employed [3] and for good reason showing stronger efficacy than behaviour therapy or cognitive therapy alone [4].

Yet, populations who experience sleep problems as a result of poor behaviour patterns, who lack adequate sleep hygiene may respond differently to those diagnosed with clinical insomnia. This population is more likely to lack sleep from not allowing themselves the opportunities and environments for doing so rather than experiencing hyper-arousal. In support, subtle biological differences have been found between individuals diagnosed with insomnia and those who are considered just sleep deprived [5]. In this study, those with clinical insomnia performed better on a simple vigilance task yet were slower on a more complex vigilance assessment.

Despite these biological differences there appears to be a lack of focus on how arousal and behaviour work in tandem with each other in a non-clinical population to aid or interfere with sleep. In a recent test of an arousal reduction technique versus a behavioural technique [6] arousal appeared to be ineffective in improving sleep in comparison to the behaviourally driven approach. In this study it appeared helping people to regulate their pre-sleep behavioural patterns better, including creating a conducive to sleep environment. This technique resulted in better sleep quality, faster sleep onset times and fewer night-time disturbances as well as better sleep planning. In contrast, participants using a mindfulness-based technique to reduce pre-sleep arousal levels showed no greater improvements than controls.

In another study of problem gamblers [7] the capacity to regulate one's behaviour mediated the relationship between problem gambling and sleep problems. However, while one's tendency to strongly react to events, known as their arousability levels, was associated with problem gambling it showed no relationship with sleep nor did it moderate the relationship between gambling and sleep.

Both these studies suggest two possibilities. Either arousal is not affecting sleep patterns in these non-clinical populations or identifying how arousal affects sleep requires a more complex method than self-report in these individuals. Certainly, the results from these studies do not suggest that arousal is an issue to be ignored in non-clinical sleep studies. When it comes to sleep maintenance issues the person is left without a choice of addressing behaviour as in the middle of the night as reducing arousal is the only way they can get back to sleep.

Instead, future research could look into better ways to assess how physiological arousal in non-clinical populations affects sleep despite it not being at the levels of hyper arousal seen in individuals diagnosed with insomnia. Further, focus on assisting with behavioural self-regulation of pre-sleep patterns in the general population also seems needed.

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