



## ECONOMY

# How naps can boost economic growth

A team of economists recently conducted a real-life sleeping experiment to determine how sleep affects productivity, among other things. It turns out the term ‘power nap’ is so named for a good reason.

‘I’ve always been an early riser. It’s 04:36 as I write this, but then, I was also in bed quite early, getting my usual six to seven hours of sleep.

This isn’t uncommon for South Africans. According to Sleep

Cycle, an app that tracks sleep patterns, we’re the first to go to sleep every night – at 22:46 on average. But we’re also early risers – at 06:08 – second after Guatemalans. (Apparently the Dutch have the best sleep quality, Iranians the worst, while Greeks, Italians and Spaniards snore the most!)

While these numbers suggest the average South African gets about seven hours of sleep nightly, the sample is, of course, unlikely to be representative. Yet, even seven hours is at the lower end of what’s required.

Most studies agree that between seven and nine hours of sleep is necessary for adults to function optimally. Kids need more; from nine hours as teenagers to 14 hours as babies. Lack of sleep could have serious health consequences; it’s been linked to obesity, heart disease, diabetes and high blood pressure. In the US, 6 000 car deaths occur annually due to sleep-deprived drivers.

It’s especially those living in cities that are likely to suffer most, where noise, heat and pollution contribute to sleep deprivation. Even more so for the poorest, who often don’t have access to the modern amenities that can reduce these physical discomforts.

That’s why scientists find alarmingly low quantities of sleep among low-income workers in a city like Chennai in India, for example: just 5.6 hours per night, with 95% of adults sleeping less than seven hours on average. Most strikingly, sleep is highly fragmented, with 32 awakenings in a typical night, of which nine are longer than five minutes.

Some economists, seeing how sleeping improves behaviour in laboratory experiments, have claimed that adding just an additional half-hour of sleep daily could have substantial economic benefits – from boosting productivity at work to improving cognition in school. The question is whether this works in practice.

A team of economists from Harvard, MIT and the University of Pennsylvania wanted to find out. They recruited 452 low-income adults in Chennai and divided them into three groups: The first received night sleep treatments “that offered participants information about their sleep, verbal and/or financial encouragement to increase sleep and items to improve their home sleep environments”. The second group’s participants had daily half-hour afternoon naps in a quiet space in the office. The third was the control group, told to go about their lives as usual.

The researchers followed the recruits for a month, measuring the quantity and quality of their sleep and other outcomes, like work productivity. (The recruits were all employed as data transcribers, a job

which one could imagine would be affected by sleep deprivation.) The results have been published as an NBER Working Paper.

The first intervention did what it was supposed to: It increased the amount of night sleep per recruit by an average of 27 minutes. “This increase in time asleep was entirely driven,” the authors note, “by greater time spent in bed – on average 38 additional minutes per night – rather than improved sleep efficiency or gains in other measures of sleep quality.”

But to their surprise, the additional half-hour had no effect on productivity. Not only did the workers not gain from the additional sleep, but they actually worked fewer minutes and earned less. Furthermore: “We also do not detect any impacts on the other outcomes, including psychological wellbeing, physical health, and time, risk, and social preferences. Nor do we find effects on a standard test of attention designed by sleep researchers to detect sleep deprivation.”

Why is this? One reason, they suggest, is that although the quantity of sleep increased, the quality didn’t. “Given their current sleeping conditions, the short- and medium-run marginal benefits of sleep are low. In contrast, the opportunity costs are high: It takes 86 more minutes in bed to produce an hour of sleep.”

What about the office naps? Eighty percent of the second group’s recruits fell asleep during their allotted nap time, yielding an additional 13 minutes of sleep. Because it was in a dedicated quiet space in the office, the quality was also much higher than night sleep.

And this mattered: In contrast to additional night sleep, office naps “increased work productivity by 2.3%, boosted a measure of attention, and raised an index of psychological wellbeing. Naps also increased patience as measured both by reduced present bias in a real-effort task and resulted in 14% higher deposits in a savings account.”

Economists have long advocated sleep as an important tool of economic development. But, aside from lab experiments, we’ve lacked evidence to back these claims. Now we know, thanks to this novel real-world experiment, that high sleep quality, instead of just quantity, may be essential to unlocking the benefits of sleep.

What about policy? It’s clear that the poorest people in cities struggle to sleep well. Improved housing that reduces noise, heat and pollution of slums and townships seems like an obvious first step. But we don’t always have to wait for the policymakers. One way to improve the health of workers – and simultaneously boost productivity – is to offer them a space to nap, even if only for a half-hour. Maybe it’s time for your office to build that calm and quiet sleeping pod, away from the daily rush. ■

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