

## LET SLEEP HAPPEN SUBMISSION TO MENTAL HEALTH PRODUCTIVITY COMMISSION

This submission has 3 aims:

To describe and increase public understanding of:

1. The Reciprocal relationship between poor sleep & poor mental health.
2. Insomnia features + prescribing culture fostering sleep medication dependence and increasing overdose risk. (BEACH data)
3. Cost effectiveness & evidence for CBTi, ameliorating depression through sleep improvement.

Poor Sleep is both an early warning sign of deteriorating mental health, plus a crisis warning sign of imminent suicide intent (shame will mean many do not self disclose suicidality at Emergency Departments, but instead disclose only sleep disturbance).

Insomnia is the most common sleep disorder, affecting up to 40% of the population.

It features distress and dissatisfaction with sleep quantity or quality, re:

Difficulty initiating, maintaining sleep (frequent waking, or problems resuming sleep after waking), or both.

Early morning waking & inability to resume sleep.

Clinically significant distress, impairment in social/occupational/ educational/academic/ behavioural/ other important areas of functioning;

Occurs at least 3 nights per week;

Present for at least 3 months;

despite adequate opportunity for sleep

Pre-existing insomnia is a primary risk factor for first episode depression. 40-50% of insomnia sufferers have a comorbid mental disorder. These people are 10 times more likely to have clinical depression, 17 times more likely to have clinical anxiety. It starts early: paediatric research links childrens' sleep disturbance with anxiety and depression.

So poor sleep affects mental and physical health; Poor mental and physical health affects sleep.

And the perceived "go-to" for sleep problems - prescription sleep medications - is found by the clinical research to complicate the picture further. According to the Victorian Coroners Court, Benzodiazepine sleep prescription medications were involved in 55% of 384 overdose deaths investigated in 2014, up from 49% 4 years earlier. (Thereafter the medications Xanax and Valium were moved to Schedule 8, or restricted prescribing status).

ABS 2016 data on drug-induced fatalities show:

- Benzodiazepines were the most common substance present in drug induced deaths in 2016, being identified in 663 (36.7%) deaths

- Benzodiazepines are the most common substance in drug deaths for women from age 20 to their mid-60s.
- Benzodiazepines are the most common substance present in deaths of males of the 35-39 age group.

If benzodiazepines were the most common substance present in either accidental & intentional drug induced deaths in 2016 (36.7%) deaths – and the vast majority of deaths were accidental - this means at least 440/663 people in Australia died accidentally from an overdose that featured benzodiazepines.

Benzodiazepines are medications prescribed for the treatment of anxiety and insomnia, and are prone to tolerance and addiction. They are particularly dangerous when taken with other substances as they affect the central nervous system and cause respiratory depression. In over 96% of drug deaths where benzodiazepines were present in 2016, they were mixed with other drugs including alcohol. Apart from 1999, benzodiazepines have consistently been the most common single substance identified on toxicology.

Islam et al 2013 examined 20-years (1992–2011) of benzodiazepine dispensing in Australia using data from the Drug Utilisation Sub-Committee and the Pharmaceutical Benefits Scheme (PBS). In this 20-year period, 174 080 904 scripts were recorded, with temazepam - prescribed primarily for insomnia - the most dispensed benzodiazepine (35% of scripts), followed by diazepam (23%). Since 1998, there has been a modest but steady increase in per-script DDD (World Health Organisation-defined daily doses).

## 2. Insomnia features + prescribing culture fostering sleep medication dependence and increasing overdose risk. (BEACH data)

BEACH (Bettering Evaluation & Care of Health) study prescribing data (comparing actual prescribing rates vs what is reported by GPs):

Found 90% of patients presenting with insomnia were prescribed a medication (majority are benzodiazepines). Temazepam is still most-preferred drug in primary care (50%), then melatonin (less than 10%). So prescribing culture fosters easy availability of hypnotic medications to fuel dependence.

Insomnia features that cement the psychological route to dependence and accidental overdose on sleep medications include interactions between sleep medication memory effects, habit formation, intermittent reinforcement, and attribution change.

Medication tolerance development and intermittent reinforcement lead into escalating sleep self-medicating behaviours.

The psychological route to accidental overdose starts with memory loss:

1. All the major benzodiazepine & BZRA manufacturers warn consumers of confusion and memory loss side effects; even Merck, the manufacturer of the new orexin sleep medication Belsomra/Suvorexant, warns prospective users of memory loss & confusion on this medication.
2. Psychological processes of Habit Formation (a cue+a behaviour+ a reward),

### 3. Attribution change, and intermittent reinforcement.

Malcolm Lader of Kings College Addiction Centre talks of widespread inability to stop short term sleep medication prescription sleep medication use becoming longterm dependence.

One is not “short-circuiting” or stopping an insomnia habit, but forming a medication-taking habit and grafting it onto a conditioned insomnia habit. A habit of attributing sleep success to sleep medications. Attributions easily shift to confidence in medications because already in insomnia patients don’t trust the brain to regulate sleep.

Then tolerance (to the medications) develops because of a process called neuroadaptation and associated blunting of dopamine release over time. The medications over time become ineffective, and one needs higher and higher doses to get any effect. Overdose risk increases, especially if adding in other sedatives (like alcohol, antihistamines, or opiates).

At the same time the medications’ amnesia side effect – plus escalated frantic dosing behaviours due to intermittent reinforcement, set the stage for accidental overdose. (Intermittent reinforcement is when we can’t predict a reward so we increase behaviours to induce the reward – like playing pokies/slot machines at a casino).

CBTi: the treatment that works and is recommended by RACGP:

Insomnia CBT attribution change strategies and behavioural experiments test these fearful beliefs that inadvertently reinforce insomnia hypervigilance and self-medicating behaviours.

Widespread promotion of (side-effect free) Cognitive Behaviour Treatment for insomnia will quickly and cost-effectively promote substantial and enduring sleep improvements. Through this route CBTi will cost-effectively ameliorate depression through sleep improvement.