



**INQUIRY INTO SLEEP HEALTH AWARENESS IN AUSTRALIA**  
**Supplementary Submission**  
**20<sup>th</sup> February 2018**

Thank you for the opportunity to appear before the Committee at the Sydney Public Hearing on 5<sup>th</sup> February 2018.

As part of our submission, we made 2 recommendations:

- (1) Implement monitoring and surveillance of population sleep behaviour.
- (2) Provide targeted funding for secondary analysis of existing datasets.

We wish to provide some further detail on these points that may be of assistance to the Committee in reporting on the findings of the Inquiry.

**(1) Monitoring and surveillance of population sleep behaviour.**

What is not measured, cannot be improved. It is only through inclusion of sleep health indicators in routinely conducted population surveys that we can sustainably track the sleep health of the community.

We note that countries such as the Sweden and Norway have had a sleep health indicator in health surveys since the late 1980s, while the Centres for Disease Control has had sleep (duration, sufficiency, disorders) within their rolling Behavioral Risk Factor Surveillance System since 2008.

The only nationally collected sleep indicator is “the use of sleeping tablets or capsules” and this has been collected sporadically in National Health or National Mental Health Surveys since the 1970s. This clearly indicates a consequence of poor sleep and use of healthcare but does not provide information on either the appropriateness of this use, nor identify which sleep behaviours or social determinants may be responsible for the poor sleep. (Attached is an unpublished and preliminary analysis of this data.)

In the Health Survey of 2014-2015, data were collected on bed-times and waketimes (for all ages from 5 years+), although we are not aware of any formal analysis and publication of this information. Unfortunately, this item has been removed from the latest National Health Survey 2017-2018, so we no longer have any national surveillance of sleep behaviour.

Quality of data is important: data should come from large, representative samples of the Australian community to aid best decision-making on the relative importance of sleep for health. Smaller studies do not provide high enough resolution of data to comment on

the sleep of people who live in regional areas or people who work in different occupations, or at different life stages; and data from research participants is likely to be biased towards those of higher socioeconomic status and against those who have lower capacity to access and benefit from healthcare.

We want to also make clear the distinction between clinical sleep disorders and sleep behaviours in the population. Much of the epidemiological research in Australia has been conducted on obstructive sleep apnoea (e.g. Busselton and MAILES cohorts). However, sleep health is not only the absence of sleep disorders like OSA, but 'healthy sleep' in the sense of refreshing, restorative sleep of good quality and sufficient duration.

We are calling for the surveillance of sleep behaviours because we recognise behaviours are modifiable. Sleep education is based on around behaviours such as avoiding caffeine, going to bed at regular times, and appropriate use of screen-based technologies. We need to understand the social and cultural determinants of sleep to provide effective education and awareness of sleep health in the community.

Sleep behaviours and associated fatigue are also vitally important for quantifying how lack of sleep affects those in certain occupations and industries. We are not aware of population-based data that provides this information in Australia, although such a dataset would be an important one for occupational health and safety.

## **(2) Targeted funding for secondary analysis of existing datasets.**

We live in the age of "Big Data" but have yet to capitalise on this by using existing large datasets for sleep health research. We would like to see a targeted funding scheme for secondary analyses of data which would encourage the use of existing datasets to gain insights into sleep health, and which would encourage the use of existing datasets for research more generally.

The Productivity Commission Report on "Data Availability and Use" (2017) highlighted that "an enormous range of information is collected by governments, researchers, and businesses about individuals and their activities... However, there is less publication of this information than would help achieve widespread benefits for the community."

Information on sleep is collected in large-scale epidemiological cohorts in children, adults, and vulnerable populations such as older people and Aboriginal and Torres Strait Islander peoples. We also have unique opportunities in Australia to study sleep through population data linkage, in which routinely collected datasets such as hospital, birth, death, Medicare, and Pharmaceutical Benefits Scheme records are combined to gain insight into the healthcare services associated with sleep disorders.

We believe that targeted funding for the analysis of existing local datasets would facilitate more cost-effective research that is also more immediately applicable and translatable to the Australian context.

Already, one of the outcomes of the Inquiry and the process of the AEA preparing a submission is that epidemiological community is more aware of sleep health. Members of the AEA are more conscious of the need to incorporate sleep into cohort studies, and to analyse this data with an eye to providing more information about the sleep of the Australian community.

We hope this increases collaboration between epidemiologists and sleep researchers, increases the number of research funding applications for this purpose, and ultimately increases our knowledge of population sleep health in Australia.

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## Introduction

Sleep disturbances appear to have increased in recent years.<sup>1,2</sup>

Nearly all cases of sleep disturbance in Australia are prescribed medication.<sup>3</sup>

This poses increasing costs to healthcare.

Has the use of sleep medications increased over time?

## Methods

Data came from 7 national health surveys

N=203,455 respondents aged 15 to 75 years and over

Table. Comparison of survey characteristics.

Survey year	Sample size	Measure of sleep medication use
1977-78	28,751	Used in last 2 days*
1983	35,058	Used in last 2 days* Used in last 2 weeks
1989-90	41,509	Used in last 2 weeks
1995	41,440	Used in last 2 weeks
2001	19,175	Used in last 2 weeks
2004-05	20,780	Used in last 2 weeks
2007-08	16,742	Used in last 2 weeks

\*1983 was used as the comparison year

Self-reported use of sleeping pills or tablets was the main variable of interest.

Logistic regression analyses were used with survey year, age, and gender as covariates

Model 1 compared use in last 2 days in 1977 to 1983 (n=63,809). Model 2 compared use in last 2 weeks in other years to use in 1983. (n=174,704). Odds ratios are in Figure 2.

## References

1. Kronholm E, Partonen T, Laatikainen T, Peltonen M, Harma M, Hublin C, et al. Trends in self-reported sleep duration and insomnia-related symptoms in Finland from 1972 to 2005: a comparative review and re-analysis of Finnish population samples. *J Sleep Res* 2008;17(1):54-62.
2. Rowshan Ravan A, Bengtsson C, Lissner L, Lapidus L, Bjorkelund C. Thirty-six-year secular trends in sleep duration and sleep satisfaction, and associations with mental stress and socioeconomic factors – results of the Population Study of Women in Gothenburg, Sweden. *J Sleep Res* 2010;19(3):496-503.
3. Charles J, Harrison C, Britt H. Insomnia. *Aust Fam Physician* 2009;38(5):283.

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## Results

Figure 1. Proportion of (a) men and (b) women reporting use of sleep medications in the last 2 weeks, in 2007 compared to 1983, by age group.

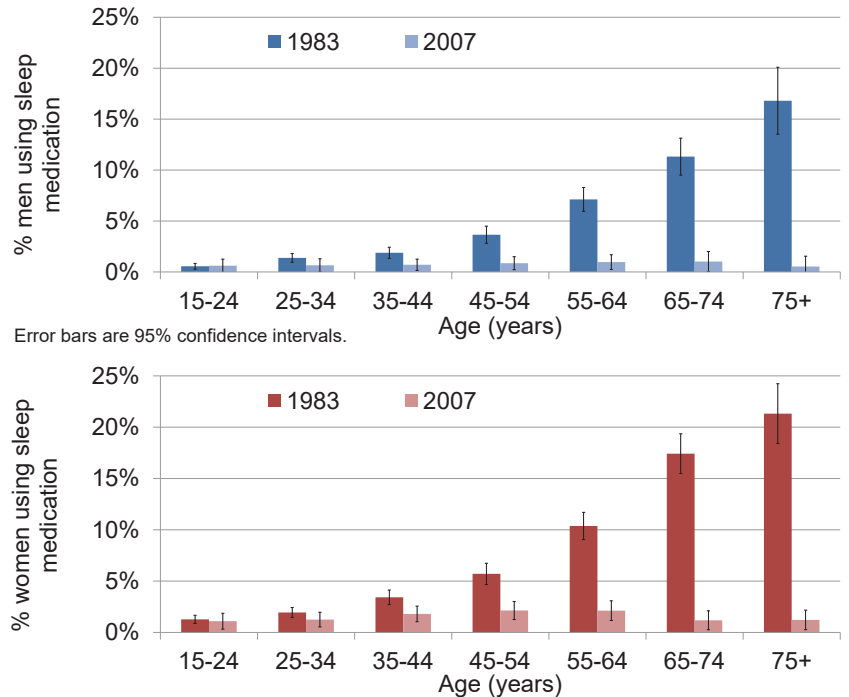
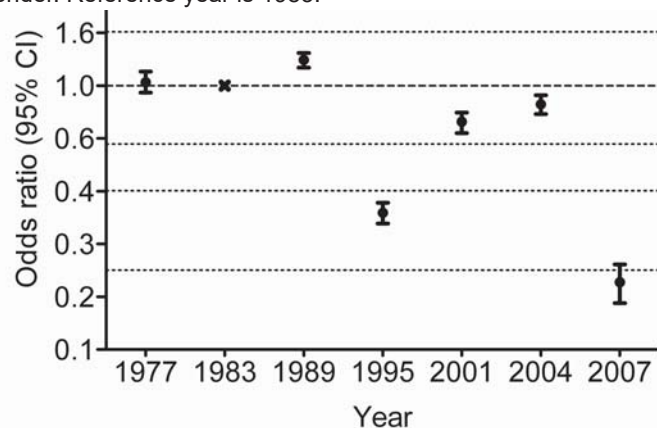


Figure 2. Odds ratio for sleep medication use by survey year, adjusted by age and gender. Reference year is 1983.



## Discussion

Use of sleep medications has decreased significantly since 1977 in both men and women, especially in older age groups.

This probably reflects changes in prescribing trends.

It is unclear whether there is also a related decrease in rates of sleep disturbance.

## Conclusion

Use of sleep medications by community-based adults does not appear to be increasing in Australia.

