

The sleep habits of an Australian adult population: A report on the 2015 online sleep survey from the Sleep Health Foundation.

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## **Background**

During Sleep Awareness Week in July 2015, The Sleep Health Foundation published a short survey to get a snapshot of the sleep behaviour of Australian adults and assist in better understanding what is helping or hindering sleep. A link to the survey was promoted via email, on the Sleep Health Foundation website and on social media such as Facebook.

## **Survey contents**

The questions asked members of the public to report on their sleep on the prior night. Questions included are listed below;

- What is your age? Options: 18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75+
- What is your gender? Options: Male, Female
- What is your occupation? – Open Ended Response
- Postcode – Open Ended Response
- What time did you go to bed?
- What time did you get to sleep?
- What time did you finally wake up?
- How many times did you wake in the night?
- Did anything disturb your sleep? (Possible responses: noise, work duties, thoughts on mind, toilet, light, aches/pains/physical discomfort, air temperature, electronic media, partner, other [open ended response])
- How would you rate your quality of sleep (1 = worst sleep ever, 10 = best sleep ever)
- Did you drink anything with caffeine in it yesterday? Indicate the amount of coffee, tea, caffeinated soft drink, chocolate drinks, caffeine pills, other (open ended response).
- Did you have alcohol yesterday? Indicate the amount of beer, wine, spirits, other (open ended response)
- Did you nap yesterday? Indicate the number of naps.
- Did you take sleeping pills to help you sleep? Were they: Prescribed, Over-the-counter, or Herbal Remedies? Provide brand name and strength.
- Do you have any other comments? (Open ended response)

## **The Sample**

A total of 1050 people completed the questionnaire, with 730 females and 320 males. There were 296 younger adults, 451 middle aged adults, and 303 older adults included in the sample. The most common professions were those in healthcare (12.19%) and admin (11.14%), followed by students (4.67%), unemployment (4.48%), and teachers (4.19%).

**Table 1. Breakdown of Respondents Based on Australian State**

State	Number of Respondents	Percentage of Sample
ACT	32	3.05
NSW	379	36.10
VIC	217	20.67
QLD	101	9.62
SA	145	13.81
WA	132	12.57
TAS	17	1.62
NT	8	0.76
No Response	19	1.81

### **Overall Results**

Overall, people went to sleep at 11:14pm (S.D. = 1hr 35min) and woke at 6:32am (S.D. = 1hr 51min), achieving 7hrs and 18 minutes of sleep (S.D.= 1hr 51min). Average reported sleep quality was 6.01 (S.D. = 1.86), and people woke up an average of 2.18 times (S.D. = 1.74) (See Table 2). Sixty-six percent of people reported their sleep being disturbed, with the most common reasons being toilet visits (36% of people; average of 1.57 visits); thoughts on mind (21% of people); aches/pains/physical discomfort (16% of people); and noise (14% of people) (See Table 3).

Eighty-seven percent of people reported consuming caffeine the previous day, with 33.50% consuming alcohol, and 6.95% using a sleeping pill. Almost 13% of people took at least one nap of the preceding day (See Table 4).

**Table 2. Sleep Characteristics for the Overall Sample, and Split by Sex and Age.**

Sleep Characteristics	Overall	Males	Females	18 - 34	35 - 54	55+
Mean Sleep Onset Time	23:14:21	23:25:30	23:09:28	23:30:57	23:03:40	23:15:50
Mean Wake Time	6:32:14	6:24:08	6:35:47	7:08:23	6:22:51	6:05:34
Mean Total Sleep Time	7:17:53	6:58:38	7:26:19	7:37:25	7:19:10	6:49:44
Mean Sleep Quality	6.01	6.02	6.01	6.26	6.02	5.70
Mean Number of Awakenings	2.18	2.04	2.24	1.64	2.22	2.51
Percentage of People who Napped	12.86	19.75	9.85	11.15	10.56	21.61

### **Effect of Age**

The seven age categories were condensed into younger adults (18-34 y), middle aged (35-54 y), and older adults (55+ y).

Age of respondents had little effect on sleep onset times, with sleep occurring between 23:00 and 23:30 for all groups, however wake time was advanced with increasing age, which in turn reduced total sleep time by almost 1 hour in the 55+ group compared to the 18-34 group. Mean sleep quality decreased with age, with an increase in daytime naps. These results are consistent with previous research.

Consumption of caffeine (Table 4) increased steadily with age, with an increase in both the percentage of people consuming caffeine, and the total amount of caffeine being consumed daily,

with people aged 55+ consuming an average of 177mg per day. Alcohol consumption also increased, with 51% of over 55s consuming alcohol, and use of sleeping medications increased markedly, with only 2.5% of 18-34 year olds using any form of medication (most commonly over the counter medications), and 15% of over 55s using medications – although these were most commonly herbal remedies such as Valerian, 6.5% of over 55s were using prescribed sleeping medications (see Table 4).

Age also had an effect on sleep disturbance (Table 3), with the middle aged group reporting the most sleep disturbance. Disturbances caused by thoughts on the mind, and toilet visits both increased with age, whereas disturbances caused by air temperature, electronics, and dreams all decreased with age. Pregnancy and children caused disturbance in young and middle aged adults, particularly women, and menopause became a cause of disturbance in later life.

**Table 2. Percentage of People Reporting Sleep Disturbances for Overall Sample, and Split by Sex and Age.**

Sleep Disturbances	Overall	Males	Females	18 - 34	35 - 54	55+
Any Disturbance	66.54	59.56	69.59	55.32	71.43	56.29
Noise	14.01	11.29	15.07	15.90	14.74	5.88
Work Duties	4.00	4.39	3.70	2.05	4.51	4.46
Thoughts on Mind	21.35	19.75	21.92	18.58	20.94	22.69
Toilet	36.32	33.54	37.40	21.28	35.87	46.09
Light	2.29	0.94	2.74	1.79	2.50	1.21
Aches/ Pains	15.82	13.79	16.58	10.31	15.54	15.34
Temp	7.63	5.64	8.36	8.22	7.94	5.18
Electronics	1.14	0.63	1.23	1.79	0.66	0.35
Partner	13.25	8.46	15.21	11.95	11.56	9.33
Pets	3.91	2.19	4.52	1.59	3.77	3.46
Children	6.01	4.08	6.71	4.77	8.81	-
Pregnancy	0.67	-	0.82	0.68	0.64	-
Sleep Disorders	1.24	1.25	1.23	0.45	0.67	1.73
Dreams	1.91	0.94	2.19	2.45	1.99	0.86
Menopause / Hot Flushes	0.67	-	1.23	-	0.69	1.21
Illness/ Coughing	1.05	-	1.51	0.68	1.32	0.35
Other	6.39	5.64	6.58	5.61	4.95	8.56

### Effect of Sex

Women reported receiving 28min more sleep per night than men, and while their reported sleep quality was the same (Table 2), women were much more likely to report having experienced a disturbance to their sleep (Table 3), with increased reports of almost all categories, including: thoughts on their mind, needing the toilet, aches and pains, disturbed by their partner and children, and dreams. Additionally, women’s sleep was further disturbed by pregnancy and menopause. Work duties was the only disturbance reported by more men than women.

Men were more likely to consume alcohol and caffeine in the prior 24 hours (Table 4), however sleeping medication was more prevalent in women, with 8.34% of women using some form of medication, compared to only 3.76% of men.

**Table 3. Consumption of Sleep Altering Substances for the Overall Sample, and Split by Sex and Age.**

Sleep Altering Substances	Overall	Males	Females	18 - 34	35 - 54	55+
People Who Consumed Caffeine (%)	88.67	90.91	87.69	73.96	82.35	89.84
Average Caffeine Consumption (mg)	147.29	162.80	140.51	98.53	149.47	177.44
People Who Consumed Alcohol (%)	33.50	36.36	31.59	19.49	31.28	51.79
People Who Used Sleeping Meds (%)	6.95	3.76	8.34	2.48	6.86	14.90
People Who Used Prescribed Meds (%)	1.71	2.18	3.15	0.91	2.22	6.52
People Who Used Over-The-Counter Meds (%)	2.86	0.94	3.01	1.57	2.43	2.42
People Who Used Herbal Remedies (%)	2.38	0.31	2.33	-	1.78	9.04

### Effect of Profession

As respondents were not asked directly if they were shift workers, shift work was classified by assessment of each respondents profession, and professions known to commonly worked shift work were classified as such. For example, nurses, sleep scientists, and police officers were all classified as shift workers. In addition, if a participant commented that they were a shift worker, they were marked as such. The remaining respondents were classified as either “non-shift workers” or “retired”.

As expected, shift workers (M = 0:10am S.D. = 3:21) went to bed later, and had more variable bed times than non-shift workers (M = 23:09pm; S.D. = 1:21) and retirees (M = 23:23pm; S.D. = 1:33). They also woke later (shift workers = 7:38am  $\pm$  3:00; non-shift workers 6:27am  $\pm$  1:33; retirees = 6:27am  $\pm$  2:55). Overall total sleep time was not considerably different, with shift workers obtaining 9min more sleep than non-shift workers and 23min more than retirees.

Seventy-seven percent of shift workers reported disturbances in their sleep, with the most prevalent disturbances being requiring the toilet, thoughts on their mind, and aches and pains. Retirees also reported high rates of requiring the toilet, and aches and pains.

Retirees were more likely to consume alcohol, caffeine, and sleeping medicines than the other two groups. Retirees were also more likely to nap than both non-shift, and shift workers, with 25% of retirees napping, compared to 10.75% of non-shift workers, and 19.4% of shift workers.

### Sleep Disorders

Presence of sleep disorders was not specifically assessed in the questionnaire. Participants were classified as having a sleep disorder if they reported having one at any point in the questionnaire. Of the 1050 participants, only 33 reported having a sleep disorder – 16 with sleep apnoea, 6 reported snoring, 4 reported insomnia and 3 reported restless legs syndrome. Other disorders reported included bruxism, and idiopathic hypersomnia. It is not clear whether sleep disorders had been diagnosed by a sleep physician or self-diagnosed.

Individuals with sleep disorders had more variable sleep onset and wake times, as well as total sleep time, compared to the sample overall.

Almost 79% of respondents with a sleep disorder reported disturbances in their sleep, with the most common being using the toilet (42.42%), their sleep disorder itself, or their CPAP machine (36.36%), thoughts on their mind (24.24%) and aches and pains (24.24%).

Caffeine consumption was high in this group, with 94% of respondents consuming caffeine in the past 24 hours, and an average consumption of 198mg.