

# SLEEP PROBLEMS AMONG RISKY DRINKING AUSTRALIAN ADOLESCENTS

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## A third had scores indicative of clinically relevant insomnia

- 33% reported difficulty falling asleep (onset insomnia)
- 7% reported difficulty staying asleep (maintenance insomnia)
- 20% reported problems with waking up too early or earlier than desired (terminal insomnia)
- 25% were dissatisfied with their sleep pattern
- 14% reported their sleep problem was noticeable to other people
- 17% were distressed about their sleep
- 39% said their sleep problem was interfering with their daily functioning

Almost a third (32%) had total ISI scores indicative of adolescent insomnia (adolescent ISI  $\geq 9$ <sup>(3)</sup>). Using the stricter adult guidelines (ISI  $\geq 15$ ), 7% had scores indicating moderate to severe clinical insomnia. In comparison, an Australian general population study found that 2% of 14-17 year olds breached the same adult criteria<sup>(4)</sup>.

## Risky drinkers not catching up on their sleep debt

General population adolescents report a longer sleep time over weekends vs. weekdays in order to catch up on sleep-debt. This discrepancy grows with age, with 16-18 year olds reporting a 1.5-2h difference<sup>(5, 6)</sup>.

Interestingly, there was no significant difference in this sample's weekday (7.19h) and weekend (7.08h) sleep duration (Wilcoxon signed rank test;  $z=-.20$ ,  $n=85$ ,  $p=.85$ ). Though weekday duration appeared similar to US samples (7.1h for US 15-18 year olds)<sup>(6)</sup>, this risky drinking group appeared to have shorter weekend sleep hours compared to the US 15-18 year olds (8.7h).

It is possible these drinkers were sleeping less over the weekends due to more time spent drinking and socialising. Most (88%) reported a drinking session in the past 2 weeks, and most (81%) drank on a Friday, Saturday or Sunday night.

Forty-one percent finished their last drink from 1-5am, and 33% finished from 10pm to midnight. In comparison, the mean bedtime for a 15-18 year old US student on a non-school day was 12.24am<sup>(6)</sup>.

## Most regulated their sleep-wake cycle with drugs

71% used a drug to stay awake in the past 2 weeks:

- 60% used coffee or tea (containing caffeine)
- 34% energy drinks (containing caffeine)
- 5% cigarettes
- 2% dexamphetamine
- 4% used another drug (not listed)

28% had used a drug to help them get to sleep in the past 2 weeks:

- 18% used cannabis
- 5% alcohol (16% had ever used alcohol to get to sleep)
- 8% over the counter medicines from the pharmacy
- 5% used prescription drugs

Three quarters of this group appeared to be self-regulating their sleep-wake cycles with drugs. For example, 18% used cannabis to get to sleep in the past 2 weeks. In comparison, 14% of Australian 14-19 year olds used cannabis for any reason in the past 12 months<sup>(7)</sup>.

## Introduction and Aims

Sleep problems including insomnia can contribute to adolescents' impairment within cognitive, emotional and physical domains. Approximately 11% of adolescents in the general population experience insomnia using the DSM-IV criteria<sup>(1)</sup>.

There appears to be a bidirectional relationship between sleep disturbance and alcohol and other drug (AOD) use problems<sup>(2)</sup>. This study sought to further elucidate the links between adolescent sleep and drug use.

## Design and Methods

Face-to-face interviews were conducted with 85 risky drinking adolescents (WA 15-19 year olds who consumed at least 5 standard drinks at least once a month). We assessed recent alcohol and other drug use and used the Insomnia Severity Index (ISI), a reliable tool validated for the identification of clinically-relevant insomnia.

We also appraised mean sleep time over weekdays and weekends, and the use of various drugs either as sleep-aids or to stay awake. All sleep-related variables were assessed with a reference period of the past two weeks prior to interview.

## Discussion and Conclusions

Research on the relationships between sleep difficulties, hours of sleep, and drug use in adolescents is emergent, and this is one of the first studies to present Australian data. Though declines in sleep time across both weeknights and weekends are the norm, sleep need does not decline<sup>(5)</sup>, and is important for cognitive and emotional functioning<sup>(2)</sup>.

The risky drinking group in our study reported clinically relevant symptoms of insomnia, particularly with falling asleep, and waking too early. This finding is in line with international literature which associates poorer sleep with higher AOD use<sup>(1,2)</sup>, and research which demonstrates that alcohol use disturbs normal progression of sleep architecture especially during the second half of the sleep period<sup>(8)</sup>. Late night socialising appeared to impact upon total sleep time, quality of sleep episodes, and use of drugs self-identified for use in regulating sleep-wake cycles appeared to be the norm.

## Implications for Practice, Policy , Research

Sleep problems are an important risk factor for adolescent alcohol and other drug use and associated problems. Some argue that independent treatment of sleep disorders can also reduce risky AOD use.

## Limitations

This study reports associations between drug use and sleep outcomes in a cross-sectional sample of adolescents and cannot be used to infer causality. The sample examined displays a greater degree of heterogeneity than previous samples including a greater proportion of older adolescents who are experiencing sleep problems. Future research is needed to map how longitudinal changes in sleep and drug use are associated across time.

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<sup>4</sup> Hillman DR, Lack LC. Public health implications of sleep loss: the community burden. *The Medical Journal of Australia*. 2013;199(8):7-10.

<sup>5</sup> Carskadon MA. Sleep in Adolescents: The Perfect Storm. *Pediatric clinics of North America*. 2011;58(3):637-47.

<sup>6</sup> National Sleep Foundation. 2006 Sleep in America poll: summary of findings 2006 [January 2016]. Available from: <https://sleepfoundation.org/sleep-polls-data/sleep-in-america-poll/2006-teens-and-sleep>.

<sup>7</sup> Australian Institute of Health and Welfare. 2013 National Drug Strategy Household Survey. 2014.

<sup>8</sup> Roehrs TA, Roth T. Sleep Disturbance in Substance Use Disorders. *Psychiatric Clinics of North America*. 2015;38(4):793-803.