

# Can sleep contribute to “closing the gap” for Indigenous children?

## Relatively simple interventions could make a significant difference

The wellbeing of Australian Indigenous children has long been an issue of concern and the subject of numerous national partnerships, action plans and government policies. This is primarily because of the high incidence of health problems and academic deficits among Indigenous children in comparison with non-Indigenous children.<sup>1</sup> The aim of these government policies is to bring about a general increase in Indigenous children’s health and academic outcomes. We propose that poor sleep health may be a significant and, to date, poorly addressed factor that should be considered within the discourse around closing the gap in the health and wellbeing of Indigenous children and young people.

The body of literature on this issue provides very clear evidence that sleep problems in children (whether they have a physiological or non-physiological cause) have strong and causal associations with secondary deficits in academic performance, attention and learning, emotional regulation, behaviour and mood regulation, with increased likelihood of obesity, diabetes, high blood pressure, somatic health and psychological health.<sup>2</sup> While there is a paucity of comparable data for Indigenous children, some studies are beginning to report similar findings. Recent findings on the sleep of Indigenous children suggest that this group may also be encumbered with a higher prevalence of sleep problems.<sup>3-7</sup>

Among physiological sleep disturbances, secondary sleep disturbance due to asthma has been reported in non-Indigenous children, but has yet to be fully explored in Indigenous children. This is despite the greater incidence of asthma among Indigenous children compared with non-Indigenous children.<sup>4</sup> Sleep disordered breathing (ranging from primary snoring to obstructive sleep apnoea accompanied by nocturnal hypoxaemia) has known associations with daytime deficits in neuropsychological and psychosocial domains, and has also been found in one study to have a prevalence of 14.2% in Indigenous children.<sup>3</sup> This study, one of the first to investigate sleep-disordered breathing in Indigenous children, found high prevalences of snoring, wheezing and restless sleep. Despite this, no further studies have been undertaken since 2004.<sup>4</sup> Associations between all these conditions therefore remain to be explored in Indigenous children.

Not only must we consider the physiological aetiology of poor sleep, but also the impact it has on both the physiological and psychosocial development of Indigenous children. Recent findings suggest links

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between obesity and reduced sleep duration,<sup>2</sup> and with the increasing and worrying prevalence of obesity among Indigenous children in Australia, their sleep profiles should be considered. In addition, there is a growing body of research showing associations between diabetes and sleep quality that have not been sufficiently explored in Indigenous children and young people.<sup>8</sup>

Some efforts to understand sleep in Indigenous children have been undertaken. In summary, data from various studies show that, compared with non-Indigenous children, Indigenous children report poorer sleep quality (eg, sleep scheduling, sleep fragmentation),<sup>5,7</sup> decreased sleep duration,<sup>7</sup> worse sleep hygiene,<sup>5</sup> increased sleepiness,<sup>6</sup> and more instability and irregularity in their sleep-wake patterns,<sup>5</sup> particularly in “get up” times. Furthermore, these sleep problems were related to aggression,<sup>6</sup> withdrawn behaviours,<sup>6</sup> thought problems and internalised behaviours,<sup>6</sup> reduced reading ability and numerical skills.<sup>7</sup>

## What now?

Poor sleep, whether inferior in quality or quantity, is essentially modifiable. There are currently few data on which to base any assessment of how much poor sleep might contribute to poor health, wellbeing and academic performance in Indigenous children, but evidence in non-Indigenous children and young people suggests that not only is it significant, but also that it is amenable to treatment regardless of whether the sleep problem has a physiological cause.<sup>2</sup> Treatment can have significant and positive outcomes. Considering that sleep is one of the key requirements of good health, it is only logical that it should be explored, investigated and improved, and that doing this might have positive impacts on these children’s lives. This may seem simplistic, but health-related lifestyle interventions have been shown to be successful in the past.<sup>9</sup> Such interventions can be targeted at an individual or community level, and if they have a positive impact on even a single child, this would be an improvement on what is happening at present.

Clearly, there are considerable challenges to intervening to try to close the gap between Indigenous and non-Indigenous health, including socioeconomic and demographic factors, cultural differences, preferences about sleep and sleep hygiene and parenting, and Indigenous scepticism about “white fella” interventions. However, exploring whether sleep interventions would be an acceptable method to bridge our divides might be worth the effort. Certainly careful and sensitive negotiations have previously allowed researchers to engage and work with community elders



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to facilitate the first objective investigation of children's sleep in a remote Indigenous community.<sup>7</sup>

Poor sleep is inherently modifiable. Therefore, any contribution sleep has to downstream factors (eg, health, wellbeing, academic performance, behaviour) is also potentially modifiable. For this reason, research funding and cross-institutional and multidisciplinary research efforts into understanding Indigenous sleep are necessary if we are serious about investigating not *if* but *how much* sleep is a contributor to Indigenous wellbeing so we can attempt, through sleep, to close the gap.

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- 1 Closing the gap Prime Minister's Report 2012. Canberra: Department of Families, Housing, Community Services and Indigenous Affairs, 2012. <http://www.fahcsia.gov.au/our-responsibilities/indigenous-australians/publications-articles/closing-the-gap/closing-the-gap-prime-ministers-report-2012> (accessed June 2013).

- 2 Blunden S, Beebe D. The contribution of intermittent hypoxia, sleep debt and sleep disruption to daytime performance deficits in children: consideration of respiratory and non-respiratory sleep disorders. *Sleep Med Rev* 2006; 10: 109-118.
- 3 Glasgow NJ, Goodchild, EA, Yates R, et al. Respiratory health in Aboriginal and Torres Strait Islander children in the Australian Capital Territory. *J Paediatr Child Health* 2003; 39: 534-539.
- 4 Valery PC, Masters IB, Chang AB. Snoring and its association with asthma in Indigenous children living in the Torres Strait and Northern Peninsula Area. *J Paediatr Child Health* 2004; 40: 461-465.
- 5 Blunden S, Camfferman D. Sleep patterns in Indigenous vs. non-Indigenous children in a rural setting. *Sleep Biol Rhythms* 2012; 10 Suppl 1: A171.
- 6 Blunden S, Chervin RD. Sleep, performance and behaviour in Australian Indigenous and non-Indigenous children: an exploratory comparison. *J Paediatr Child Health* 2009; 46: 10-16.
- 7 Cooper P, Kohler M, Blunden S. Sleep and academic performance in Indigenous Australian children from a remote community: an exploratory study. *J Paediatr Child Health* 2012; 48: 122-127.
- 8 Valery PC, Moloney A, Cotterill A, et al. Prevalence of obesity and metabolic syndrome in Indigenous Australians youths. *Obesity Reviews* 2009; 10: 255-261.
- 9 Rowley KG, Daniel M, Skinner K, et al. Effectiveness of a community-directed "healthy lifestyle" program in a remote Australian aboriginal community. *Aust N Z J Public Health* 2000; 24: 136-144. □