Sleep/Wake Patterns and Sleep Problems in South Australian Children Aged 5-10 Years: Biopsychosocial Determinants and Effects on Behaviour

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ABSTRACT

In 1913, Lewis Terman and his colleague, Adeline Hocking published a paper asking a seemingly simple question "But exactly how much sleep is required by this developing organism *(child)* for its healthy functioning and growth?" (Bracketed italics added). Almost 100 years later, this question remains largely unanswered. Whilst it is well acknowledged that sleep duration decreases as a child ages, changing sleep practices are determined not only by biological processes, but also by cultural and social influences. Few studies to date have adequately addressed this. It is also well acknowledged that sleep problems in childhood are common, yet research is limited due to lack of standard methodological protocols. Accurate knowledge of poor sleep/wake habits and prevalence of sleep problems may be vital to ensuring the behavioural well-being of many children.

The following thesis presents the results of the South Australian Paediatric Sleep Survey (SAPSS); a study designed to address the above limitations and examine sleep/wake patterns, sleep problems and behavioural associates in a large community sample of school-aged children in Australia. Using a combination of previous tools and author devised items, a sleep, health and behaviour questionnaire was developed and subjected to rigourous psychometric testing. Exploratory factor analysis revealed six robust factors: Sleep Routine, Bedtime Anxiety, Morning Tiredness, Night Arousals, Sleep Disordered Breathing, and Restless Sleep. These sub-scales demonstrated good internal reliability, face validity, and test-retest reliability at 6, 12 and 18 months.

The SAPSS questionnaire was distributed to parents of children through schools and provides the first indication of normative sleep/wake patterns in a representative sample of school-aged children in Australia (N=1904; mean age 7.7±1.7yrs). The results of this study add to the discussion that the process of sleep is embedded in cultural and social norms, with differences reported between Non-Caucasian and Caucasian children, as well as between weekend and school nights. These results also confirm the postulation that sleep and behaviour are inextricably linked. Bedtime anxiety, restless sleep, night arousals, bruxism, hyperhydrosis and sleepwalking were all associated with behavioural deficits, either independently or comorbidly.

Moreover, the SAPSS adds considerably to the current state of knowledge by revealing a regular sleep routine, in otherwise healthy children, has the strongest effect on daytime functioning. In addition to the traditional indicators of sleep/wake patterns, the current study examined sleep schedules, in particular the consistency of bedtimes, risetimes and sleep duration. More children reported poor sleep schedules than traditional indicators of poor sleep habits and a change in bedtimes greater than 2 hours across the week or a poor sleep routine resulted in up to four times the risk of reported behavioural problems.

The current paradigm regarding sleep in children is that „one size fits all", however the current study demonstrates that sleep/wake patterns are largely dependent on cultural and social norms, and that there is a need for a focussed debate on what constitutes healthy sleep in children. The thesis presented below argues that new strategies for education and health information addressing healthy sleep in children are needed.

DECLARATION

I declare that this work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

I give consent to this copy of my thesis, when deposited in the University Library, being made available for loan and photocopying, subject to the provisions of the Copyright Act 1968.

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Sarah Biggs   Date

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The amount of sleep required by the

average person is five minutes more –

Wison Mizener