

Title: Anatomy of a Children's Sleep-Over

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300 word max

Introduction

'Sleepovers' are common in western cultures. Children's enjoyment of these late nights is matched only by their parents' dread of their after-effects. Yet, there are very few robust data on the acute impact of the common 'sleepover' scenario on sleep architecture. We report on the impact of a laboratory simulated 'sleepover' on sleep parameters in young children.

Method

Thirty typically developing children aged 7-14 years were recruited as part of the SleepSuite iPad sleep cognition assessment. Each child underwent two nights, randomly assigned to unrestricted and restricted sleep, separated by at least a week, in an accredited sleep laboratory with full AASM polysomnographic monitoring.

Normal bedtimes were observed on the unrestricted night. During the 'sleepover', children, in groups of eight, ate pizza, watched a late night movie, and had a delayed bedtime. We analysed changes in objective sleep parameters .

Results

Paired data are presented for the first 14 children (See Table 1). As intended, the 'sleepover' reduced sleep opportunity by a mean of 200 minutes, from an average of 8 hours 38 minutes to 5 hours 18 minutes,. Total sleep time reduced 160 minutes from 7 hours 18 minutes, to 4 hours 38 minutes, a smaller reduction due to a small increase in sleep efficiency. The total amount of non-REM and REM sleep was significantly reduced by 103 minutes (NREM, $p < .0001$) and 58 minutes (REM, $p=.04$). However, while REM sleep percentage decreased from 16% to 11% ($p=.035$), the percentage of NREM sleep increased from 84% to 89% ($p=.035$).

Discussion

The small increase in sleep efficiency might partially mitigate decreased sleep opportunities in children. The relative preservation of NREM is important since NREM sleep is crucial for healthy development and also has implications for research which assumes that sleep restriction will lead to less efficient sleep.