

The impact of bedtime technology use on sleep quality and excessive daytime sleepiness in adults

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Abstract: Objectives: There have only been a few studies on electronic device use and sleep in adult populations, so we sought to investigate the impact of bedtime technology use on sleep quality and excessive daytime sleepiness (EDS) through a population-wide survey of Saudi Arabian adults.

Material and methods: This cross-sectional survey of 10,106 Saudi Arabian adults gathered data on the number and frequency of electronic device use (smartphones, tablets, computers, televisions, radios, and music players) at bedtime, sleep quality, and EDS as measured by the Epworth sleepiness scale. Associations between electronic device number and frequency of use and sleep-related outcomes were evaluated using binary logistic regression.

Results: Twenty-eight percent and 9.7% of respondents reported "fairly" or "very bad" sleep quality in the preceding month, respectively. 95.1% of respondents had smartphones in their bedrooms, which were used regularly (a few nights a week, every or almost every night) by 80.7% of respondents. The number of devices in the bedroom had little effect on sleep quality parameters and EDS, but regular use of almost all devices was associated with "bad" or "very bad" sleep quality (odds ratios (ORs) 1.32-2.12); smartphone or tablet use was associated with sleep latency >30 minutes (smartphones OR 1.98, 95% CI: 1.51-2.60; $p < 0.0001$; tablets OR 1.44, 95% CI: 1.05-1.99; $p < 0.05$). Electronic device use was associated with a 1.3-1.9-fold risk of moderate to severe EDS.

Discussion: This large study strengthens the limited evidence in adults that electronic device use during bedtime usually reserved for sleep impacts sleep quality. Sleep hygiene advice must be updated to include limiting electronic device use in the bedroom.