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Effect of Screen Time on Sleep Quality among Advanced-Level Students: Cross-sectional School-based Study in Colombo, Sri Lanka

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Excessive screen time is increasingly linked to poor sleep quality among adolescents. This study aims to determine the specific effects of screen time on sleep quality among advanced-level (AL) students, who are particularly vulnerable due to increased digital device use following the COVID-19 pandemic. Despite global awareness, research specific to Sri Lanka, especially post-pandemic, is lacking. This study addresses this gap by examining the relationship between screen time and sleep quality in this population. A cross-sectional study was conducted among 280 AL students from a selected school in Colombo using convenience sampling. Data on screen time and sleep quality were collected through standardized questionnaires, with sleep quality measured by the Pittsburgh Sleep Quality Index (PSQI), which is validated in Sri Lanka. A global PSQI score of 5 or higher indicated poor sleep quality. Data analysis was performed using logistic regression, chi-square tests, and Pearson correlation coefficients with SPSS 25. The sample, with a mean age of 17.70 years, revealed that 60.21% of participants experienced poor sleep quality. A significant majority reported screen time exceeding recommended limits (>2 hours/day) on both weekdays (81.7%) and weekends (81.0%). Weekday screen time was significantly associated with poor sleep quality (OR: 1.522, 95% CI: 1.080-2.144, $p = 0.016$). Higher weekday screen time was positively correlated with subjective sleep quality ($r = 0.262$, $p < 0.001$), sleep latency ($r = 0.248$, $p < 0.001$), sleep disturbance ($r = 0.252$, $p < 0.001$), and daytime dysfunction ($r = 0.315$, $p < 0.001$), and negatively correlated with habitual sleep efficiency ($r = -0.156$, $p = 0.008$). Increased screen time, particularly on weekdays, is significantly associated with poorer sleep quality among AL students. Targeted interventions to reduce screen time could potentially improve sleep quality in this population.

Keywords: *screen time, sleep quality, advanced-level students, pittsburgh sleep quality index*