

# Sleep and Exposure to Screens of Digital Media Devices in Israel

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**Introduction:** The influx of digital media devices with screens equipped with light emitting diodes (LED) into bedrooms exposes users to ongoing short wavelength (SWL) lighting during the evening and at night when under natural conditions long wavelength light is more dominant (evening time). Results of several studies reveal a negative physiological, behavioral and functional outcome of the exposure to SWL artificial light at night (ALAN) from digital media screens. The aims of this study are to assess the relationships between digital media usage, sleep patterns, subjective sleepiness and attention abilities in adults in Israel.

**Methods:** We recruited 280 adult participants between the ages of 18 and 82 (51% female). Participants filled out the following questionnaires: demographic and general health evaluation, PSQI, KSS sleepiness scale, and questionnaire prevalence and usage patterns of digital media devices, designed specifically for the purposes of this study.

**Results:** Our results indicate that Israelis reported going to sleep late (00:39h) and sleeping an average 6.59 hours at night. Israeli adults also indicated using smartphones for 30 min and TV for about 15 min after "lights off". We noted that excessive exposure to these devices in the evening and night was associated with longer sleep latency and decrease sleep quality ( $r=.192, p<0.01$  and  $r=.167, p<0.01$ ). Moreover, we found a negative correlation between attention abilities in the morning and the usage time of digital media in the evening and nighttime ( $r=-.155, p<0.01$  and  $r=-.188, p<0.01$ ). Exposure to digital screens at evening was positively correlated with subjective sleepiness on the KSS ( $r=.135, p<0.05$ ).

**Discussion:** This study is the first to explore the association between digital media screen usage, sleep, and daily function in the Israeli adult population. Smartphones are the most used digital media devices in the evening and after bedtime and their use is linked with sleep and concentration difficulties