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The Effect of Short-Form Video Addiction on Academic Procrastination, Attention control, and Sleep Quality Among Undergraduate Medical Students: A Cross-Sectional Study

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Abstract

heavily by young adults, but data on how SFV addiction relates to academic procrastination, attentional control and sleep among Indian medical students are scarce.

Objectives: To determine the association of short-form video addiction with academic procrastination, attentional control and sleep quality among undergraduate medical students at a medical college

Methods: This cross-sectional study was conducted among undergraduate MBBS students of a medical college in Bengaluru Rural, Karnataka, from June to December 2025. A self-administered online questionnaire included the 12-item Short-Form Video Addiction (SFVA) scale, the Academic Procrastination Scale (APS), the Attention Control Scale (ATT) and the Pittsburgh Sleep Quality Index (PSQI). Associations were assessed using Pearson correlation (confirmed by

Spearman correlation), linear regression adjusted for year of study, one-way ANOVA with Tukey's post hoc test across SFVA tertiles, and chi-square tests for cut-off-based categories.

Results: Of 301 students analyzed (mean SFVA 26.9 ± 9.6), higher SFVA scores correlated with greater procrastination ($r = 0.33$), poorer attentional control ($r = -0.37$) and poorer sleep quality ($r = 0.40$); all $P < 0.001$, and the associations persisted after adjustment for year of study. Mean APS, ATT and PSQI scores worsened across SFVA tertiles (ANOVA $P < 0.001$; $\eta^2 = 0.10$, 0.11 and 0.16). Poor or severe sleep affected 42.9% of students in the lowest SFVA tertile and 81.3% in the highest; high procrastination affected 5.8% and 28.3% respectively.

Conclusion: Higher SFV addiction was consistently associated with more procrastination, weaker attentional control and poorer sleep among medical students, in a graded fashion. Longitudinal studies and institutional screen-use awareness programmes are warranted.

Keywords: Short-Form Video Addiction, Academic Procrastination, Attentional Control, Sleep Quality, Medical Students, India.

Introduction

Media consumption has shifted markedly over the past decade, and short-form video, typically under 90 seconds, now sits at the centre of that shift. Platforms such as Instagram Reels and YouTube Shorts make it easy to spend hours scrolling through content that is algorithmically designed to sustain engagement. Each video is short enough that stopping feels easy, yet the next one begins before a conscious decision to continue is made. This design is particularly effective among young adults, and students are among the most active users.[1]

Use of these platforms rose sharply during the COVID-19 pandemic, and habits that formed then, such as prolonged screen time, disrupted routines and late-night scrolling, have persisted. The concern is not screen time in isolation but the nature of short-form video: its brevity, pace and rapid reward cycle. Repeated engagement with such highly stimulating content may gradually alter how attention is allocated, making sustained cognitive effort feel less rewarding.[2]

Attention is one of the first domains where such effects might appear. Medical education demands long periods of focused reading, note-taking and clinical reasoning, and habitual training of attention towards rapid context-switching may make sustained attention on a dense textbook chapter or a long examination harder. Studies have linked heavy short-video use with reduced attentional control, although few have been conducted in India.[3,4] Academic procrastination is closely related: when tasks feel cognitively heavy and the phone offers instant relief, students are drawn away from their work. Short-form video addiction has been associated with academic procrastination, both directly and through reduced attentional capacity.[1]

Sleep is another chief concern. Late-night use of these platforms is common, and feeds that extend use beyond intended stopping points expose users to light and emotionally arousing content when the body is preparing for sleep. Short-form video addiction has been shown to predict poorer sleep quality among college students, partly through reduced physical activity and increased procrastination.[5,6]

Although each of these outcomes has been studied separately, studies assessing attention, procrastination and sleep together are uncommon, particularly in India.[4] Medical students face high academic demands, rapidly

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expanding digital access and limited prior research. We therefore studied the association of short-form video addiction with academic procrastination, attentional control and sleep quality among undergraduate medical students at a medical college in Bengaluru Rural, Karnataka.

Materials and Methods

Study design, setting and period

This cross-sectional analytical study was conducted at a medical college in Bengaluru Rural, Karnataka, India, from June to December 2025.

Participants

The target population was undergraduate MBBS students from first to fourth year. All eligible students available during the study period were invited (universal sampling). Students aged 18 years or above, of any gender, who gave informed consent were included. Students diagnosed with a psychiatric disorder and currently taking psychiatric medication, and those who declined, were excluded. Only fully completed questionnaires were analysed, giving 301 students. The Pittsburgh Sleep Quality Index could be computed for 281 of them because of incomplete or unusable sleep-timing responses; analyses involving sleep therefore used this subset.

Data collection

A structured self-administered questionnaire was built in Google Forms and circulated through WhatsApp. It was pretested for clarity and peer-reviewed for face validity. Participation was voluntary and anonymous.

Study instruments

Short-form video addiction was measured with a 12-item scale scored from 1 (rarely) to 5 (always); total scores range from 12 to 60, with higher scores indicating greater addiction. As no established cut-offs were available, students were grouped into tertiles of the SFVA score (low 12–22, moderate 23–30, high 31–60).

Academic procrastination was measured with the Academic Procrastination Scale, with Likert responses from 1 to 5 and higher scores indicating greater procrastination.[7] Our questionnaire administered 32 items (range 32–160). To apply the 25–125 classification (low 25–58, moderate 59–92, high 93–125), totals were prorated to a 25-item metric (total × 25/32).

Attentional control was measured with the 20-item Attention Control Scale of Derryberry and Reed,[8] scored 1 to 4, with 11 items reverse-scored so that higher totals (20–80) indicate better control (poor 20–39, moderate 40–59, good 60–80).

Sleep quality was measured with the Pittsburgh Sleep Quality Index (PSQI), whose seven component scores sum to a global score of 0–21, higher scores indicating worse sleep.[9] Scores of 0–4 were classified as good, 5–10 as poor and 11–21 as severe sleep disturbance. Free-text bed times, wake times and latencies were converted to numerical values before scoring.

Statistical analysis

Data were entered in Microsoft Excel and analysed using IBM SPSS Statistics version. Internal consistency was assessed with Cronbach's α and distributions with the Shapiro–Wilk test. Although the scores departed from strict normality ($P < 0.001$), the sample was large ($n = 301$); Pearson's correlation coefficient with 95% confidence intervals was therefore used as the primary measure of association, and Spearman's rank correlation was computed to confirm robustness. Linear regression estimated the change in each outcome per SFVA point, adjusted for year of study. Students were divided into SFVA tertiles, and outcomes were compared by one-way ANOVA (homogeneity of variance checked with

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Levene's test) followed by Tukey's post hoc test, with eta-squared (η^2) as the effect size; the Kruskal–Wallis test was used as a non-parametric check. Category distributions were compared by chi-square tests, using Monte Carlo exact P values where expected counts were small, and linear-by-linear association tests. A two-sided $P < 0.05$ was considered significant. Effect sizes were interpreted using conventional benchmarks.[10]

Ethical considerations

The study was approved by the Institutional Ethics Committee before commencement. Electronic informed consent was obtained before participants accessed the questionnaire. No identifying information was collected, and data were kept confidential.

Results

Participant and scale characteristics

A total of 301 students were analysed: 147 (48.8%) in the first year, 81 (26.9%) in the second, 42 (14.0%) in the third and 31 (10.3%) in the fourth. Descriptive statistics and reliability are shown in Table 1 (Panel A), and the distributions in Figure 1. The mean SFVA score was 26.9 ± 9.6 (median 25, interquartile range 20–33), with a right-skewed distribution. Cronbach's α was high for the SFVA scale (0.92) and the APS (0.94) and modest for the ATT (0.61) and PSQI (0.66). Mean sleep duration was 6.4 ± 1.2 hours and median sleep latency was 15 minutes.

Using the study cut-offs (Table 1, Panel B), most students had moderate academic procrastination (242, 80.4%), with 46 (15.3%) in the high category. Attentional control was moderate in 283 students (94.0%), poor in 8 (2.7%) and good in 10 (3.3%). Overall, 158 of 281 students (56.2%) had poor and 17 (6.0%) severe sleep disturbance, so that 62.3% had a PSQI score of 5 or more.

Association of SFVA score with procrastination, attention and sleep

SFVA score was significantly correlated with all three outcomes (Table 2; Figure 2). Higher SFVA scores were associated with greater academic procrastination (Pearson r = 0.33, 95% CI 0.22–0.43), poorer attentional control (r = −0.37, −0.46 to −0.26) and poorer sleep quality (r = 0.40, 0.30–0.49), all $P < 0.001$. Spearman coefficients were similar ($\rho = 0.37$, −0.34 and 0.39; all $P < 0.001$). After adjustment for year of study, each additional SFVA point was associated with 0.62 (95% CI 0.41–0.83) higher APS points, 0.197 (0.139–0.255) lower ATT points and 0.121 (0.088–0.154) higher PSQI points; the models explained 10.5%, 12.6% and 17.1% of the variance in procrastination, attention and sleep respectively (adjusted R^2).

Outcomes by SFVA tertile

Scores worsened progressively across SFVA tertiles (Table 3, Panel A; Figure 3). Mean APS scores were 94.8 ± 17.2, 103.6 ± 17.8 and 109.4 ± 18.3 in the low, moderate and high tertiles (ANOVA $F = 17.3$, $P < 0.001$; $\eta^2 = 0.10$). On Tukey's test the low tertile differed from the moderate ($P = 0.002$) and high ($P < 0.001$) tertiles, whereas the difference between the moderate and high tertiles was not significant ($P = 0.060$). Mean ATT scores fell from 52.7 ± 5.1 to 50.4 ± 4.1 and 48.5 ± 5.5 ($F = 18.2$, $P < 0.001$; $\eta^2 = 0.11$), and mean PSQI scores rose from 4.3 ± 2.4 to 5.6 ± 2.7 and 7.2 ± 3.1 ($F = 27.4$, $P < 0.001$; $\eta^2 = 0.16$); every pairwise difference was significant for 001ATT ($P = 0.003$, < 0.001 and 0.020) and PSQI ($P = 0.004$, < 0.001 and < 0.). Variances were homogeneous (Levene's test, $P > 0.05$), and the Kruskal–Wallis test gave the same conclusions (all $P < 0.001$).

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Category distribution by SFVA tertile

The distribution of students across the cut-off categories differed significantly by SFVA tertile (Table 3, Panel B). High academic procrastination was present in 5.8%, 12.1% and 28.3% of students in the low, moderate and high tertiles ($\chi^2 = 22.5$, $P < 0.001$; linear trend $P < 0.001$). Poor or severe sleep rose from 42.9% to 64.1% and 81.3% ($\chi^2 = 37.8$, $P < 0.001$; trend $P < 0.001$), and severe sleep disturbance occurred only in the moderate (5.4%) and high (13.2%) tertiles. Poor attentional control occurred in none of the low-tertile students and in 4.0% of each of the other two tertiles, while good attentional control was more frequent in the low tertile (7.8% vs 1.0%; $P = 0.005$; trend $P = 0.002$); because ATT category counts were small, this result should be interpreted cautiously.

Table 1: Descriptive statistics, reliability and classification of the study scales (N = 301)

Panel A. Descriptive statistics and reliability

Measure	n	Mean ± SD	Median (IQR)	Range	Cronbach's α
SFVA score (12–60)	301	26.9 ± 9.6	25 (20–33)	12–60	0.92
APS score (32–160)	301	102.5 ± 18.7	102 (94–114)	32–159	0.94
ATT score (20–80; higher = better)	301	50.6 ± 5.2	51 (48–53)	27–73	0.61
PSQI global score (0–21; higher = worse)	281	5.7 ± 3.0	5 (3–7)	0–15	0.66
Sleep duration, hours	295	6.4 ± 1.2	6.5 (6.0–7.0)	–	–
Sleep latency, minutes	294	–	15 (10–30)	–	–
Habitual sleep efficiency, %	287	89.3 ± 10.8	92.3 (82.4–100.0)	–	–

Panel B. Classification using the study cut-offs

Scale	Category (score range)	n	%
APS (prorated to 25 items)	Low (25–58)	13	4.3%
	Moderate (59–92)	242	80.4%
	High (93–125)	46	15.3%
ATT	Poor (20–39)	8	2.7%
	Moderate (40–59)	283	94.0%
	Good (60–80)	10	3.3%
PSQI	Good (0–4)	106	37.7%
	Poor (5–10)	158	56.2%
	Severe (11–21)	17	6.0%

SFVA, Short-Form Video Addiction scale; APS, Academic Procrastination Scale; ATT, Attention Control Scale; PSQI, Pittsburgh Sleep Quality Index; SD, standard deviation; IQR, interquartile range. PSQI could be computed for 281 students. All scores departed from normality (Shapiro–Wilk $P < 0.001$). APS categories use totals prorated to 25 items.

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Table 2: Association of SFVA score with academic procrastination, attention control and sleep quality

Outcome	n	Pearson r (95% CI)	P	Spearman ρ (95% CI)	Adjusted β* (95% CI)	Adj. R^2
Academic procrastination (APS)	301	0.33 (0.22 to 0.43)	<0.001	0.37 (0.26 to 0.47)	0.62 (0.41 to 0.83)	0.105
Attention control (ATT)	301	−0.37 (−0.46 to −0.26)	<0.001	−0.34 (−0.44 to −0.23)	−0.197 (−0.255 to −0.139)	0.126
Sleep quality (PSQI)	281	0.40 (0.30 to 0.49)	<0.001	0.39 (0.28 to 0.49)	0.121 (0.088 to 0.154)	0.171

β, change in outcome score per one-point increase in SFVA score. *Adjusted for year of study. Higher APS and PSQI scores indicate more procrastination and worse sleep; higher ATT scores indicate better attentional control. P values refer to Pearson correlation; Spearman coefficients are shown for confirmation (all P < 0.001). CI, confidence interval.

Table 3: Scores (Panel A) and cut-off category distribution (Panel B) by SFVA tertile

Panel A. Scores by SFVA tertile, mean ± SD

Outcome	Low SFVA (12–22)	Moderate SFVA (23–30)	High SFVA (31–60)	F, P (η^2)	Tukey P: low–mod / low–high / mod–high
APS (n = 103/99/99)	94.8 ± 17.2	103.6 ± 17.8	109.4 ± 18.3	17.3, <0.001 (0.10)	0.002 / <0.001 / 0.060
ATT (n = 103/99/99)	52.7 ± 5.1	50.4 ± 4.1	48.5 ± 5.5	18.2, <0.001 (0.11)	0.003 / <0.001 / 0.020
PSQI (n = 98/92/91)	4.3 ± 2.4	5.6 ± 2.7	7.2 ± 3.1	27.4, <0.001 (0.16)	0.004 / <0.001 / <0.001

Panel B. Category distribution by SFVA tertile, n (%)

Scale	Category	Low SFVA (12–22)	Moderate SFVA (23–30)	High SFVA (31–60)	χ^2 (df), Monte Carlo P
APS	Low	7 (6.8%)	4 (4.0%)	2 (2.0%)	22.5 (4), P <0.001
	Moderate	90 (87.4%)	83 (83.8%)	69 (69.7%)	
	High	6 (5.8%)	12 (12.1%)	28 (28.3%)	
ATT	Poor	0 (0.0%)	4 (4.0%)	4 (4.0%)	13.5 (4), P 0.005
	Moderate	95 (92.2%)	94 (94.9%)	94 (94.9%)	
	Good	8 (7.8%)	1 (1.0%)	1 (1.0%)	
PSQI	Good	56 (57.1%)	33 (35.9%)	17 (18.7%)	37.8 (4), P <0.001
	Poor	42 (42.9%)	54 (58.7%)	62 (68.1%)	
	Severe	0 (0.0%)	5 (5.4%)	12 (13.2%)	

APS, Academic Procrastination Scale; ATT, Attention Control Scale; PSQI, Pittsburgh Sleep Quality Index; SD, standard deviation. Panel A: one-way ANOVA with Tukey's post hoc test; η^2, eta-squared; Levene's test not significant for any

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outcome; Kruskal–Wallis P < 0.001 for all. Panel B: categories are APS low/moderate/high, ATT poor/moderate/good and PSQI good/poor/severe; P values from the chi-square test (Monte Carlo exact); linear-by-linear trend P: APS < 0.001, ATT 0.002, PSQI < 0.001. ATT categories had sparse cells.

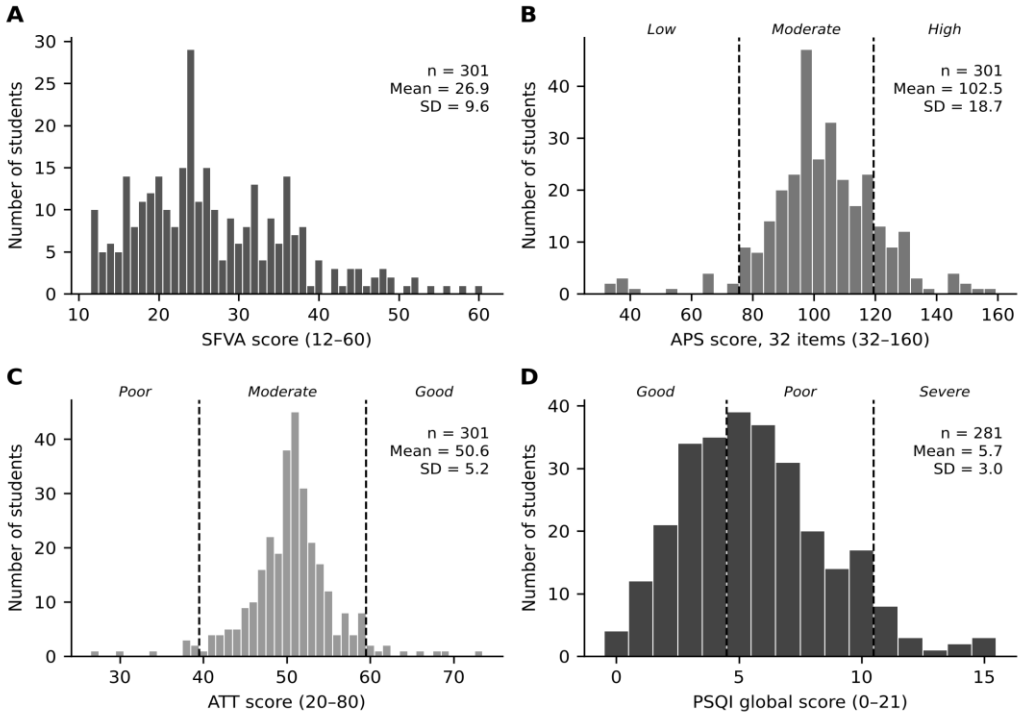


Figure 1: Distribution of (A) SFVA, (B) APS, (C) ATT and (D) PSQI scores. Dashed lines show the cut-offs used to classify students; PSQI is based on 281 students.

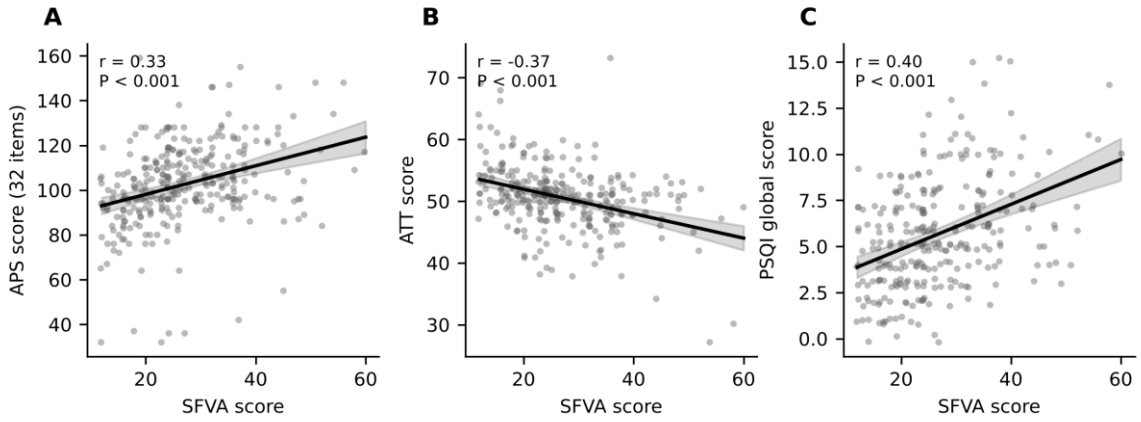


Figure 2: Relationship of SFVA score with (A) academic procrastination, (B) attention control and (C) sleep quality. Lines show linear fits with 95% confidence bands; r is Pearson's correlation coefficient.

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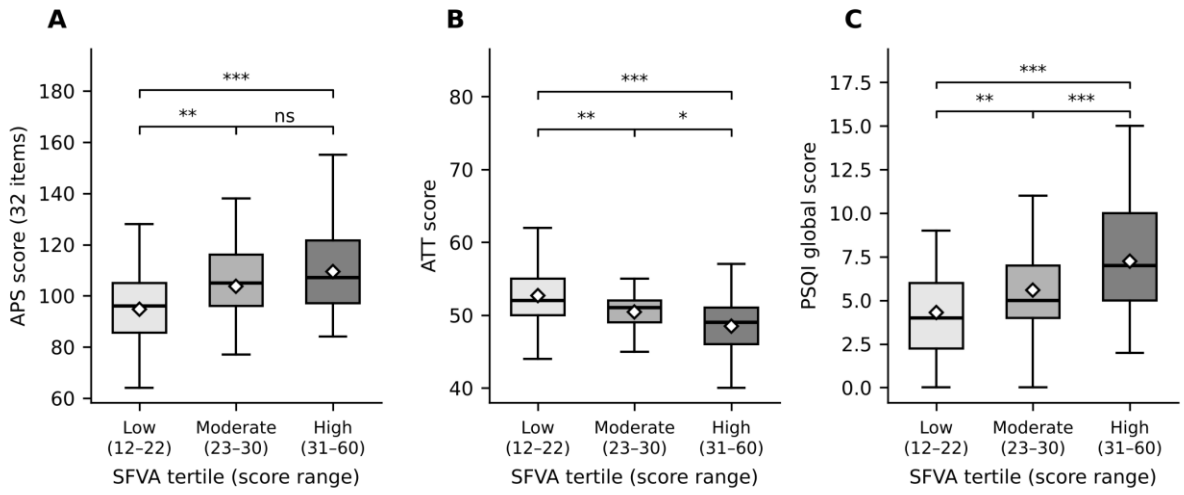


Figure 3: (A) Academic procrastination, (B) attention control and (C) sleep quality by SFVA tertile. Boxes show median range, diamonds and interquartile the mean. *P < 0.05, **P < 0.01, ***P < 0.001, ns not significant (Tukey's test).

Discussion

In this cross-sectional study of 301 undergraduate medical students, higher short-form video addiction scores were associated with greater academic procrastination (r = 0.33), weaker attentional control (r = −0.37) and poorer sleep quality (r = 0.40). These are considered statistically to be weak-to-moderate correlations,[10] and the Spearman coefficients (0.37, −0.34 and 0.39) gave the same picture, so the findings do not depend on the distributional assumptions of the Pearson test. The associations persisted after adjustment for year of study, and each of the three outcomes worsened step by step across SFVA tertiles, with medium-to-large effect sizes (η^2 = 0.10, 0.11 and 0.16). SFVA score, together with year of study, accounted for 10.5%, 12.6% and 17.1% of the variance in procrastination, attention and sleep, so most of the variation in these outcomes is explained by other factors. The consistent direction across three distinct outcomes, with a dose–response pattern, nevertheless supports the view that addictive short-form video use is part of a cluster of self-regulation difficulties among medical students.

The positive association with procrastination agrees with the moderated mediation findings of Xie et al. in Chinese undergraduates.[1] Procrastination is classically understood as a failure of self-regulation in which immediate rewards override intended study,[11] and short-form video, which delivers a reward every few seconds, may be an easily accessible source of distraction from study. In our data each additional SFVA point was associated with 0.62 more APS points, and high procrastination was five times more frequent in the highest than the lowest SFVA tertile (28.3% vs 5.8%; trend P < 0.001). The post hoc comparisons show where the difference arises: students in the lowest tertile scored significantly lower than those in the moderate (P = 0.002) and highest (P < 0.001) tertiles, whereas the moderate and highest tertiles did not differ significantly (P = 0.060). This suggests that the relationship may flatten at higher levels of use, or that the APS is less sensitive to differences within the upper range, although the P value is borderline and larger samples are needed to confirm it. Most students (80.4%) fell into the moderate procrastination category, which is consistent

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with procrastination being common in medical students generally.

Poorer attentional control among heavier users is consistent with reports linking short-video use to reduced attention span.[3,4] Li et al. similarly found that short-form video addiction reduced academic engagement.[2] Unlike procrastination, attentional control declined significantly at every step of SFVA (Tukey P = 0.003, 0.020 and < 0.001), the mean ATT score falling by about four points from the lowest to the highest tertile. Studies show that even the presence of one's own smartphone reduces available cognitive capacity,[12] indicating a plausible pathway. Two features of the ATT data call for caution. The reliability of the scale in our sample was modest (α = 0.61), which may have attenuated the correlation, and 94.0% of students fell into the moderate category, so the categorical comparison rests on very few students in the poor and good groups (the lower frequency of good attentional control in the higher tertiles, 1.0% vs 7.8%, should be read in this light).

The association with sleep was the strongest of the three (r = 0.40; adjusted R^2 = 0.171; η^2 = 0.16), and the PSQI was the only outcome in which all pairwise tertile differences were highly significant (P ≤ 0.004). Poor or severe sleep affected 42.9%, 64.1% and 81.3% of students across the low, moderate and high tertiles, and severe sleep disturbance appeared only in the moderate and high tertiles. This matches the findings of Zhao and Kou in Chinese college students and of Jiang and Yoo in adolescents.[5,6] Evening use of light-emitting screens delays circadian timing and sleep onset,[13] and engaging, emotionally charged content may add cognitive arousal. Overall, 62.3% of students had a PSQI score of 5 or more; this is higher than the pooled prevalence of about 53% reported in a meta-analysis of medical students,[14] which suggests that sleep problems are common in this population irrespective of short-video use, with heavier use adding to the burden.

These associations may be bidirectional. Students who sleep poorly or struggle to focus may turn to short-form video for relief, which in turn worsens sleep and procrastination. Sleep deprivation also weakens attention and increases procrastination, so the three outcomes probably reinforce one another. Our design cannot separate these directions; the associations should be read as associations rather than effects.

The practical implications are that medical colleges could include screen-use and sleep-hygiene education in student wellness and orientation programmes, encourage device-free study blocks and night-time cut-offs, and screen students with high SFVA scores for sleep and study difficulties.

Limitations

Limitations include the cross-sectional design, which precludes causal inference; self-reported data subject to recall and social desirability bias; a single-institution sample, limiting generalisability; and incomplete sleep data for 20 students. The scores were not normally distributed; although Pearson correlation and ANOVA are robust at this sample size and the non-parametric tests agreed, small differences in P values (such as 0.060) should be interpreted cautiously. The SFVA tertiles are sample-dependent and not clinical thresholds. Only year of study was adjusted for; other confounders such as gender, total screen time, physical activity, anxiety and living arrangements were not available, and the low proportion of variance explained indicates that these factors matter.

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Conclusion

Among undergraduate medical students, short-form video addiction was significantly and progressively associated with higher academic procrastination, weaker attentional control and poorer sleep quality, independent of year of study. Awareness and counselling on mindful short-video use and night-time screen habits should be integrated into student support services, and longitudinal and interventional studies should establish causality.

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