

# The Impact of Short-Video Addiction on Sleep Quality among College Students: The Mediating Role of Fear of Missing Out in an Educational Context

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**Abstract:** This study focuses on the role of short video addiction in college students' sleep quality and tests whether "fear of missing out" plays a mediating role. A total of 306 valid questionnaires were collected in different regions using the Short Video Addiction Scale, the Fear of Missing Out Scale, and the Pittsburgh Sleep Quality Index (PSQI). The results showed that short video addiction can not only directly affect the sleep quality of college students, but also indirectly disrupt their sleep patterns by increasing the level of fear of missing out. The above results suggest that behavioral addiction and cognitive emotional mechanisms contribute to sleep disorders in college students. Finally, this paper discusses the significance of the research findings in educational practice and mental health intervention.

**Keywords:** Sleep quality; Short-video addiction; Fear of missing out; College students

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## 1. Introduction

The China Sleep Health Research White Paper 2026 reveals that sleep quality has become an increasingly important issue among college students. Existing research suggests that good sleep is not only linked to emotional stability and physical health but also has a profound impact on cognitive function, attention levels, and information processing abilities <sup>[1]</sup>. More importantly, Prior research has demonstrated that sleep is closely related to emotional regulation, cognitive functioning, and academic performance <sup>[2]</sup>. Consequently, sleep issues among college students are not merely research topics within the fields of psychology or medicine; they should also be incorporated into the scope of educational research, as they are closely linked to the quality of talent cultivation in higher education. Research into the factors affecting college students' sleep quality is therefore particularly urgent. Existing studies have found that behavioral factors such as

mobile phone addiction are important predictors of sleep quality<sup>[3-4]</sup>. With the deepening of research, scholars have gradually focused their attention on more specific media forms, such as short video use behavior.

Short video addiction refers to the continuous dependence state formed by individuals in the process of repeatedly watching short videos<sup>[5]</sup>. With fragmentation, high stimulation, and algorithm recommendation, short videos are easy to continuously activate the reward system, weaken self-control, and may damage deep learning and attention, thus causing anxiety, depression, and sleep problems<sup>[6-8]</sup>. According to the excitement hypothesis, high-intensity audio-visual stimulation of short videos continuously activates the nervous system and increases the level of arousal, thereby delaying sleep and disrupting work and rest; at the same time, short video addiction may also lead to deep cognitive and emotional mechanisms, such as missed anxiety by strengthening psychological dependence.

Fear of Missing Out (FoMO) refers to a persistent anxiety state caused by the individual's fear of missing important information or positive events that others are experiencing<sup>[9]</sup>. In the social media environment, the high-frequency update and instant dissemination of information aggravate the individual's concern about "lagging behind others." According to the theory of social cognition, individuals will constantly adjust their cognition by observing others' behavior and information feedback, thus amplifying their sensitivity to social deprivation<sup>[10]</sup>. Meanwhile, the Use-and-Satisfaction Theory suggests that individuals with a severe FoMO tendency are more likely to use media at night, which may delay sleep latency and reduce sleep quality<sup>[11]</sup>. Existing studies have also revealed the impact of social media use on sleep from the perspective of loss anxiety<sup>[12-13]</sup>.

In short, college students' sleep problems have gone beyond the level of personal health and become a key factor affecting academic performance. Although the existing research involves the relationship between social media and sleep, it rarely discusses short video addiction and its psychological mechanisms. In particular, it lacks the analysis of the mechanism of short video addiction affecting sleep quality through missing anxiety from the perspective of education. Therefore, this study focused on college students to examine how short video addiction affects sleep quality through FoMO.

## 2. Methods

### 2.1. Participants

A total of 306 valid questionnaires were obtained after excluding invalid responses. Among the participants, 84 were male, and 222 were female. The sample included 53 freshmen, 29 sophomores, 80 juniors, 106 seniors, and 38 postgraduate students.

### 2.2. Measures

The Short-Video Addiction Scale, which consists of 14 items across four dimensions<sup>[14]</sup>. If a participant answers "yes" to any four of the seven diagnostic items, they may be diagnosed as having an addiction. Higher scores indicate stronger addictive tendencies, and the scale demonstrated good reliability ( $\alpha = 0.91$ ).

Fear of Missing Out Scale (FoMOS) comprises eight items, divided into two dimensions: fear of missing out on information and fear of missing out on social situations<sup>[15]</sup>. The scale employs a five-point Likert scale, with higher scores reflecting greater fear of missing out ( $\alpha = 0.72$ ).

The Chinese version of the Pittsburgh Sleep Quality Index (PSQI), which has 18 scoring items, covers seven dimensions<sup>[16]</sup>. Higher total scores indicate poorer sleep quality. A total score exceeding 7 is considered

indicative of a sleep disorder ( $\alpha = 0.84$ ).

### 2.3. Statistical analysis

Data were analyzed using SPSS 26.0. Descriptive statistics, correlation analysis, and mediation analysis (PROCESS Model 4 with bootstrap method) were conducted.

## 3 Results

### 3.1 Correlation analysis among sleep quality, short-video addiction, and fear of missing out

The correlation analysis results in **Table 1** showed that short video addiction was positively correlated with sleep quality ( $r=0.28, P<0.01$ ); that is, the higher the addiction level, the worse the sleep quality. There was also a positive correlation between short video addiction and FoMO ( $r=0.31, P<0.01$ ). In addition, FoMO was positively correlated with sleep quality ( $r=0.57, P<0.01$ ). The fear of missing information may not only interfere with the process of falling asleep, but also further damage the quality of sleep by improving the level of cognitive arousal. In summary, the above results verify the path of short-video addiction affecting sleep quality through emotional and cognitive mechanisms.

**Table 1.** Correlation analysis among sleep quality, short-video addiction, and fear of missing out ( $N=306$ )

	M	SD	1	2	3
Short-video addiction	3.11	0.78	1.00		
Fear of missing out	3.17	0.78	0.57**	1.00	
PSQI	6.91	3.36	0.28**	0.31**	1.00

Note: \* $P<0.05$ , \*\* $P<0.01$ , \*\*\* $P<0.001$

### 3.2. Testing the mediating effect of fear of missing out

When using the Bootstrap test, Model 4 was selected in the PROCESS section to test the simple mediating effect. According to **Table 2**, mediation analysis showed that short-video addiction significantly predicted sleep quality ( $\beta=0.28, t=5.06, P<0.001$ ) and FOMO ( $\beta=0.57, t=12.22, P<0.001$ ). When these two variables were included at the same time, the direct effect of short-video addiction on sleep quality was weakened, but still statistically significant ( $\beta=0.15, t=2.32, P<0.05$ ).

**Table 2.** Regression analysis of the mediating effect of Fear of Missing Out

Regression equation		Overall fit index			Regression coefficient significance		
Result variables	Predictive variables	R	R <sup>2</sup>	F	$\beta$	SE	t
PSQI	Short-Video Addiction	0.28	0.08	25.59***	0.28	0.06	5.06***
Fear of Missing Out	Short-Video Addiction	0.57	0.33	149.32***	0.57	0.05	12.22***
PSQI	Short-Video Addiction	0.33	0.11	18.59***	0.15	0.07	2.32*
	Fear of Missing Out				0.22	0.07	3.28**

Note: \* $P<0.05$ , \*\* $P<0.01$ , \*\*\* $P<0.001$

The analysis results of the mediating effect are shown in Table 3. The 95% confidence interval of the

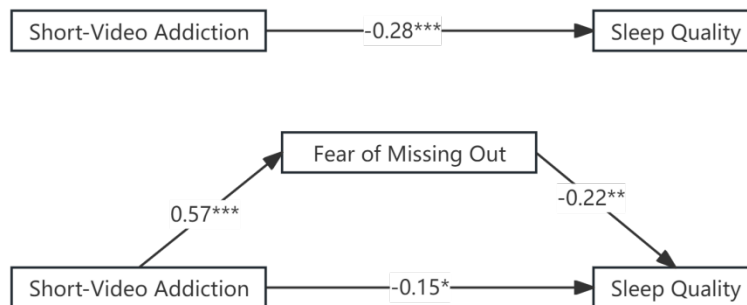
total effect (LLCI=0.17, ULCI=0.39) and indirect effect (LLCI=0.06, ULCI=0.20) of short video addiction on sleep quality does not include 0, indicating that the mediating effect of missing anxiety between short video addiction and sleep quality is statistically significant. The direct effect (LLCI = 0.02, ULCI = 0.28) was also significant, indicating that missed anxiety played a partial mediating role between short video addiction and sleep quality, and the mediating effect accounted for 46.43% of the total effect.

**Table 3.** Indirect and direct effects of Fear of Missing Out on Sleep Quality of college students

	Effect value	Standard error	95%BootLLCI	95%BootULCI
Total effect	0.28	0.06	0.17	0.39
Direct effect	0.15	0.07	0.02	0.28
Mediating effect	0.13	0.04	0.06	0.20

Note: \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$

This result shows that the mechanism of the effect of short video addiction on sleep can be understood from two levels (**Figure 1**): first, at the behavioral level, individuals occupy sleep time due to continuous viewing of short videos; the second is the cognitive emotional level. Missing anxiety increases the individual’s psychological arousal, making it more difficult to enter a relaxed state before bedtime. Both of them work together, leading to sleep delay and sleep quality decline. From the perspective of education, this dual mechanism of “behavior-cognition” caused by the use of digital media may further affect college students’ learning engagement and academic performance. Therefore, it is necessary to pay attention to students’ media use behavior and its psychological impact in educational practice.



**Figure 1.** The mediational role of Fear of Missing Out

## 4. Conclusion

This study confirms that short video addiction can damage the sleep quality of college students. This effect can be explained by mechanisms at both behavioral and psychological levels.

First, from the behavioral level, strong audio-visual stimuli in short videos can easily increase the level of physiological arousal, such as accelerating heart rate, enhancing neural activity, and thus preventing sleep. Second, the study found that there is a significant correlation between short video addiction and a higher degree of FoMO, which also reflects the built-in reinforcement mechanism of the short video platform. More importantly, people with higher FoMO levels often experience enhanced cognitive arousal near bedtime because they are always worried about missing important information or social experiences. This high level

of mental activity may delay the time to fall asleep and reduce sleep quality.

Overall, existing studies have revealed that short video addiction impairs sleep quality through a dual-path mechanism. The behavioral level is reflected in time dislocation and enhanced physiological activation; the cognitive-emotional level is characterized by FoMO and increased cognitive arousal. The two paths interact with each other and jointly contribute to the sleep problems of college students.

Follow-up studies can deeply examine the long-term effects of short video use on learning outcomes, and evaluate the interventions designed around the FoMO psychology and media use behavior, so as to provide more targeted reference for educational practice.

## 5. Implications

Based on the findings of this study, several practical suggestions can be extracted from the perspective of education and psychology.

First, colleges and universities should strengthen the guidance of students' use of digital media and incorporate media literacy education into the student training system. At present, many college students lack a critical understanding of the algorithm recommendation mechanism and the psychological motivation behind media addiction. Schools can design "digital media and self-regulation" related courses, focusing on attention management, behavioral addiction, and information screening. At the same time, teachers can introduce reflective discussions on media use in the classroom, and encourage students to critically look at how short video consumption affects their learning efficiency and cognitive engagement.

Second, psychological intervention needs to pay more attention to the core cognitive-emotional variable of FoMO. In the mental health education project, content related to FoMO can be added to help students understand the psychological mechanisms generated by it, such as generation comparison, lack of belonging, and information overload. Cognitive-behavioral therapy can be used to adjust irrational cognition, while mindfulness training helps to reduce the individual's automatic response to external information stimulation and improve the awareness of current experience. For students with severe sleep problems, targeted intervention strategies should be introduced, such as sleep hygiene education, including guiding them to reduce the time they use electronic devices before going to bed and develop regular routine habits.

Third, in the broader framework of the student development support system, it is especially important to strengthen the cultivation of self-regulation ability. Colleges and universities can systematically open training courses on time management and behavior control, covering goal setting, task disassembly, and self-supervision. With the help of digital tools, students can better monitor and limit their usage time on the short video platform. At the same time, the adoption of active teaching methods such as project-based learning and problem-based learning to improve the level of academic investment is conducive to stimulating internal learning motivation, thus reducing the dependence on short videos caused by seeking psychological comfort.

In general, the value of this study is not limited to intervention at the individual level. From a systematic perspective, it is necessary to organically combine media literacy education, mental health education, and student development projects. By working together in the three dimensions of cognition, behavior, and environment, it is conducive to shaping healthier media usage habits and improving sleep conditions, thereby promoting students' academic growth and physical and mental health development.

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## Disclosure statement

The author declares no conflict of interest.

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